

EMERGENCY MEDICAL PLANNING  
AND INDUSTRIAL DISASTER

Disaster Planning  
at a Large Corporate Headquarters

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Monsanto was founded in 1901 by John F. Queeny, in a warehouse on the St. Louis riverfront. Its first product was the now-controversial saccharin, on which production was stopped in 1969. In 76 years, Monsanto has grown into the fourth largest chemical producer in this country. More than 5,000 employees work in more than 20 buildings on the 291 acres that make up our world headquarters campus here in St. Louis.

To protect our people from natural disasters and accidents, we in the Medical Department, along with our friends in the safety and security departments, have developed emergency procedures and facilities for dealing with industrial disasters.

Planning for an industrial disaster is like buying a snow shovel and long woolen underwear. We hope we'll never need them, but we don't want to be caught with our pants down and up to our navels in snow. It's hard to plan disasters and accidents so they happen when we're ready for them. Since we're used to a semi-orderly world, where roofs stay on buildings, electric lights work, and we have food and water, it's not a pleasant thought to plan on losing these things. But that's exactly what we're doing when we draw a blueprint for an industrial disaster plan. We're preparing to lose things we depend on every day of our lives-- and then to cope with the situation after the loss occurs.

Defining the probable emergencies depends a great deal on geographic location and type of work. Ultimately, no area and no type of business are immune to any kind of disaster. However, we have found that disasters are most often caused by factors outside the control of the individual business establishment. The South and East Coasts are hurricane-prone; the Far West has a major earthquake belt; we in the Central States live in "tornado alley."

The particular emergencies we provide for include: tornadoes, power blackouts, utility failures, fires or explosions, civil disturbances, bomb threats, and military attacks. Of course, we must be ready to deal with the wide variety of medical emergencies which can happen any time in a population as large as we have-- from sprained ankles to coronaries.

We have prepared an emergency procedure manual, detailing the actions to take for each of these emergency situations. And although we realize that nothing is ever going to happen exactly as it's written in the book, this manual is extremely important.

We have three full-time doctors and two full-time nurses, who are ready for anything. The facilities rival those of a hospital emergency room: we are fully equipped with examining rooms, x-ray equipment, wheel chairs, stretchers, cardiopulmonary resuscitation equipment-- the works. It's possible for us to x-ray and examine seriously injured persons on-the-spot and give them emergency treatment. We can use our fully-equipped ambulance to send severe cases to area hospitals.

Each of the medical staff is trained in CPR, oxygen, and the use of all emergency equipment. Our emergency rooms, ambulance, and site security and safety office are all connected by telephone hotlines and two-way radios. We also have a direct phone line to area hospitals. During any disaster, the site security and safety departments act as the central control point. A control board monitors fire, burglary, and smoke alarms in all facilities across the campus. Medical facilities and the security control center have an emergency power supply for the electric lights in each building.

During any disaster, we get additional help from "monitors" (people chosen by the Personnel Department and trained by Safety and Medical) who act as leaders in getting people to safety. They have responsibility for the physical security of a specific group of people near their working area.

Unlike our various plant sites across the country, we handle only small quantities of chemicals at this headquarters site, but we experiment with an extraordinary variety of chemicals and chemical processes. There are over a thousand people in seven multi-story laboratory buildings. Professionally trained, they have a lot

of knowledge and respect for the materials they work with. Most experiments are conducted in ventilated hoods or in work areas where hazards are kept at a minimum. But accidents are an unfortunate fact of life!

Our emergency procedures for chemical explosions or fires in laboratories are different than they might be at the manufacturing locations. For example, 95% of our burns can be successfully treated with an ice-water soak. When more serious accidents happen, proper training of all the people in the labs is critically important. Recently, a female technician's clothing caught fire. In seconds, the flames had reached to her hair. Because one of her co-workers had been properly trained, he knew which fire extinguisher to use and how to use it properly. His quick action not only saved her life, but also limited her injuries to second-degree burns.

Regular training sessions are held for everyone in the laboratories--including managers and secretaries--in the use of air packs, fire extinguishers, and other emergency equipment. Special fire brigade teams get extra training to handle major emergencies. Every wing of every floor in the research center buildings has an electronic board which identifies the location of an emergency and sounds an alarm. Fire-fighting and life-saving equipment is also located near these boards. Equipment to handle other emergencies, such as acid spills, is also available at many locations throughout the labs. Special safety equipment is provided at arm's reach for those working where there is a possibility of an unusual accident. Showers and eye-washes are located every few yards in all laboratory hallways.

Natural disasters pose the greatest overall threat to human life and property. The weather can be particularly dangerous for us in the Midwest. Tornadoes are very prevalent in the St. Louis area from March through September, thus our emergency manual lists the physical description of tornado weather up front with emergency telephone numbers.

When threatening weather is recognized, the storm's movement is plotted on maps by the security people. Whenever a tornado is sighted within 30 miles of our location, the security and safety crews alert all employees by public address. Interior stairwell

doors are opened and elevators are lowered to the ground floor. Outside doors are propped open to equalize pressure. Ambulance drivers park in underground garages, power plant personnel prepare to shut down machinery, and the monitors are notified.

As the tornado closes to within 20 miles, a "take-cover" message is broadcast at least three times over the public address system. Everyone is evacuated to a pre-assigned place in the underground tunnels which connect all of our buildings. The Medical Department establishes a first-aid station on each side of the campus in a central area, and the power plant is shut down. After the "all-clear" announcement, damages are assessed and employees are either evacuated from the grounds or they are free to return to work.

I know all will agree that the primary purpose of planning for an industrial disaster is to save lives or prevent injury. And, if possible, we want to minimize the damage to property. Both can be done effectively by preparing in advance.

First, identify and define the emergencies most likely to strike. Then design the procedures most likely to deal effectively with these emergencies, and prepare written instructions in an emergency manual. Medical and safety departments should work together to implement these procedures. Finally, make available the necessary equipment for dealing with emergencies, and train your people to use this equipment.

Doesn't all of this preparation cost a lot of money? Sure it does. At our World Headquarters we spend hundreds of thousands of dollars just to be prepared for an event or an accident we hope will never happen. But if the unthinkable does happen, then no amount of money is too great if it saves a life or prevents a disabling injury. There are some things that simply cannot be measured in dollar signs.

There also is no such thing as a convenient disaster. A disaster is something you can't anticipate with certainty, like taxes, Christmas, or wrinkles. Disasters are uncanny creatures that seem to be governed by Murphy's First Law: If something can go wrong, it will at the worst possible moment.

I know it sounds simple, but the only way to really safeguard human lives and property against disasters and accidents is to be prepared!

**NIOSH**

**OCCUPATIONAL SAFETY  
AND HEALTH SYMPOSIA  
1977**

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
Public Health Service  
Center for Disease Control  
National Institute for Occupational Safety and Health

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