

## **"DISASTER MANAGEMENT"--THE NEW U.S. STANDARD**

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### **Abstract**

*"Experience has shown again and again, that lives can be saved, damage can be reduced ... by preparing for a catastrophic situation before it occurs."*

The new NFPA standard No. 1600, "Emergency/Disaster Management and Business Continuity Programs," establishes a common set of standardized criteria for evaluating and developing disaster programs in the public and the private sectors. The goal is to build disaster-resistant communities, to establish public/private partnerships, and to emphasize pro-active approaches, particularly mitigation, preparedness, and continuity planning.

The main objectives of a comprehensive emergency management program are: saving lives; preventing escalation and further damage; relieving pain and suffering; protecting property, the environment, and the economy; maintaining essential services; informing the public; promoting self-help and recovery; facilitating investigation; identifying lessons learned; and restoring normalcy.

The program elements necessary to reach these goals after forming a policy and a committee are laws and authorities; hazard identification and risk assessment; mitigation; resource management; planning and plan elements; direction, control, and coordination; communications and warning; operations and procedures; logistics and facilities; training; exercises, evaluations, and corrective actions; crisis communication, public education and information; and finance and administration.

### **Introduction**

*Disasters will never stop occurring. This is inevitable due to natural forces, technical failures, and human behavior. But experience has shown, again and again, that lives can be saved and damage reduced by preparing for a*

*catastrophic situation before it occurs.*

The United States and the rest of the world have been and will be hit again and again by all kinds of calamities, from volcanic eruptions, to tornadoes and floods, to terrorist bombings and shootings. Even if a disaster occurrence is seen as “an act of God,” its potential impact depends on human preparedness and actions.

Unfortunately, every authority is accustomed to preparing for and responding to a disaster in its own way. Different organizations have their unique missions and responsibilities; they have varied resources and capabilities; sometimes they even operate under contrary procedures and agendas. In addition, disaster policies are almost always re-active, focusing on response and recovery operations. Impact prevention through safety and mitigation strategies are, by comparison, often neglected.

There have been no national or international standards on disaster management in the past. This is not acceptable in times when even fast food restaurants use the same operating standards throughout the world.

A technical committee with the National Fire Protection Association (NFPA) has, therefore, developed the national document, “Emergency/Disaster Management and Business Continuity Programs.” This NFPA standard 1600 has passed all necessary votes, been published, and has gone into effect.

The purpose of the standard is to establish a common set of criteria for disaster/emergency management and business continuity programs. Standardized policies will enable private and public entities to mitigate, to prepare for, to respond to, and to recover from any kind of emergency in the appropriate way. The goal is to build disaster-resistant communities, to establish public/private partnerships, and to emphasize pro-active approaches.

Definition:

*A disaster is a suddenly occurring or unstoppable event that overwhelms the resources of impacted people and regions, has a long-term impact on social or natural life, and is always negative in the beginning.*

*Gummar J. Kuepper*

Detailed program objectives in dealing with any emergency/disaster situation are:

- Saving lives,
- Relieving pain and suffering,
- Preventing escalation and further damage,
- Protecting property, the environment, and the economy,
- Maintaining essential services,
- Informing the public,
- Promoting self-help and recovery,

- Facilitating investigation,
- Identifying lessons learned,
- Restoring normalcy.

To initiate an Emergency-Disaster Management/Business Continuity Program, approval, support, and funding from executive management is a prerequisite. The next steps are raising awareness and gathering the input of other groups. As many individuals, departments, and organizations as possible should be involved in the planning process. Different entities will add distinct views and support with additional ideas, solutions, and resources.

According to NFPA 1600, every entity should have a written disaster/emergency management policy that should include, but not be limited to, the following elements.

#### 1) **Laws and Authorities**

The Program should comply with applicable legislation, regulations, industry codes, and particularly cultural and ethical ideals.

#### 2) **Hazard Identification and Risk Assessment**

The entities should identify hazards caused by:

##### NATURAL EVENTS

- Floods
  - 1993 - U.S. Midwest
- Tornadoes
  - 1998, February - Florida, Orlando area, 42 fatalities
  - 1999, May - Oklahoma area, 49 fatalities
- Hurricanes/Cyclones/Typhoons
  - 1998, October - Honduras/Nicaragua, Hurricane Mitch, 11,000 fatalities
- Earthquakes
  - 1994, January - California, Los Angeles/Northridge, 64 fatalities
  - 1995, February - Japan, Kobe, 5,000 fatalities
  - 1999, August - Turkey, 17,000 fatalities
  - 1999, September - Taiwan, 2,300 fatalities
- Volcanic eruptions
- Landslides/Mudslides
- Dust storms
- Avalanches
- Snow/Ice/Hail
  - 1996, January - Northeastern U.S., 100 fatalities
- Extreme Heat/Cold

- Drought
- Forest/brush fires
- Lightning storms

#### TECHNOLOGICAL INCIDENTS

- Fire/Explosion
  - 1911, March - New York City, Triangle Shirt-waist Factory, 145 young workers died
  - 1980, November - Las Vegas, MGM Grand Hotel, 84 fatalities
  - 1991, September - North Carolina, Hamlet, Imperial Food Products chicken-processing plant, 25 workers died in the fire (As in the Triangle Shirt-waist Factory fire 80 years ago, the building was without fire alarms or sprinkler systems, and many exit doors were locked to prevent employees from stealing.)
  - 1999, March, France/Italy, Mont Blanc Tunnel: 40 fatalities
- Hazmat releases (nuclear, biological, chemical)
  - 1984, December - India, Bhopal, Union Carbide chemical plant, release of methylisocyanate gas; at least 5,000 people died, more than 200,000 were injured, many sustained lifelong disabilities
  - 1986, April - USSR, Chernobyl, explosion and fire in reactor no. 4 released radioactive material, which spread all over the Ukraine and Europe; total casualties are unknown and estimates run into the tens of thousands
- Transportation accidents (air, land, sea)
  - 1998, June - Germany, Eschede, crash of an ICE high-speed train, 100 fatalities
- Building/Structure collapse
- Power/utility failure
- Communication failure
- Air pollution
- Water pollution
- Food poisoning

#### HUMAN ACTIONS

- Terrorism
  - 1993, February - New York City, Bombing of World Trade Center
  - 1995 - Japan, Tokyo, Subway Sarin attack
  - 1995, April - Oklahoma City, Bombing Federal Building
  - 1998, August - Africa, bombing of U.S. embassies
- Economic/Business interruption
- Financial collapse
- Riots/Civil unrest
  - 1992, April - Los Angeles, 800 buildings burned, more than 2,000

- people injured, 54 died
- Sabotage
- Hostage situations
- Arson
- Violent acts and shootings
- Mass refugee movements
- Mass gatherings
- Mass hysteria or panic
- Assassinations

As the above examples dramatically demonstrate, one must always plan for the “unthinkable.” A good example is the unexpected event of a tornado sweeping through Salt Lake City in August of 1999. This rare event claimed the life of one person and injured nearly one hundred people.

The likelihood of a disaster occurrence, the vulnerability of people, property, the environment, and the economy, as well as the potential impact on critical business functions and services must be identified and assessed.

**IMPACT ANALYSIS**

It is also crucial to determine the potential impact on critical functions and services, including:

- Health and safety of persons in the affected area at the time of the incident;
- Health and safety of responding personnel;
- Continuity of operations;
- Property, facilities, and infrastructure;
- Delivery of services;
- The environment;
- Economic and financial condition;
- Regulatory and contractual obligations;
- Reputation of the entity.

**3) Hazard Mitigation**

Mitigation activities are undertaken to eliminate the hazard or to reduce the potential impact on life, business, property, the environment, etc. Safety and preparedness programs have to begin here. Establishing a safety and risk awareness culture at the management level, working places, homes, and in the community will significantly reduce disaster occurrence and impact. It goes further with technical designs and

preparations like sprinklers systems and emergency exit routes. The provision of CPR or fire-extinguisher training are also steps to prepare and mitigate. Management, employees, and families need to be instructed in what to do in case of and how to prepare for potential hazards such as food shortages, fire, tornado, etc. Other examples for mitigation procedures are:

- appropriate building construction;
- relocation, retrofitting, or removal of structures at risk;
- appropriate land-use;
- provision of protective systems or equipment;
- redundancy or duplication of critical systems and essential infrastructure;
- warning and evacuation systems;
- shelters.

#### 4) Resource Management

Resources (i.e., personnel, equipment, training facilities, materials, and funding) need to be identified. Availability, capability, and even the time frame in which these resources are required must be analyzed. A current inventory of internal and external resources must be maintained.

Mutual aid agreements on a formalized and trained basis should also be established with:

- Public and private entities;
- Neighboring communities/ businesses;
- State and federal agencies (including the military);
- Disaster relief organizations;
- Specialized personnel and experts.

Special consideration should be given to managing volunteers.

#### 5) Planning

- Strategic Plan: defines the vision, mission, goals, and objectives.
- Emergency Operations Plan: assigns responsibilities to organizations and individuals in order to carry out specific actions (i.e., life safety, fire and rescue, medical) at projected times and places.
- Mitigation Plan: establishes short- and long-term actions to eliminate or to reduce the impact of hazards.
- Recovery/Business Continuity Plan: determines short- and long-term strategic priorities, vital resources, and acceptable time frames for restoration.

All plans must describe functional rules and responsibilities of internal and external agencies and must delineate clear lines of authority.

**6) Coordination, Control, and Command**

A unified incident command/management system should be used for all response and recovery operations. The specific role and responsibility of every individual and organization should be identified and established. Clear lines of authority and communication must be established, agreed upon, and exercised. This will significantly reduce competition, confusion, and misunderstanding during the real event.

Deputies in every department must be trained as to the specific duties of their superiors. As a general rule, disaster strikes when the "chief is out of town." Even an executive can become a victim, and might not be able to execute the emergency plan and/or direct operations. As an example, the fire chief of San Francisco died during the 1906 earthquake when a brick wall collapsed into his bedroom.

**7) Communications and Warning**

*Communication is the most critical factor in any crisis situation. Therefore, all communication and warning systems should be designed to be reliable and redundant and must be periodically tested.*

Procedures to alert officials, executives, and emergency response teams are needed. Establish capabilities to warn those potentially affected by an actual or impending emergency (employees and their families, customers, vendors, etc.).

Procedures to address the information needs of casualties and their families, the media, employees, executive personnel, investigating departments, vendors, and the general public should be established. Media handling should be accomplished in a professional and trained manner. Disaster victims as well as responders need directions and leadership.

**8) Operations and Procedures**

Procedures are needed to:

- control access to the areas affected;
- identify and account for response personnel;
- account for persons affected, displaced, or injured;
- mobilize and distribute resources;
- provide short-term housing, feeding, transportation, security, communication, sanitation, reunification, and medical care for affected

- employees and their families;
- safeguard human remains (consider religious rites and cultural customs);
- provide for the mental health, critical incident stress management, counseling for victims and relatives, emergency and recovery workers, affected populations/employees;
- provide for employees with special needs (i.e., children, the disabled, seniors, the chronically ill, pet owners).

## 9) Logistics and Facilities

Procedures and locations must be prearranged to acquire and distribute:

- Means of communication,
- Services,
- Resources,
- Materials,
- Donations.

Every entity should have an emergency operations center (EOC). This facility must be established, equipped, and staffed with key agency representatives to:

- gather information about damages and needs,
- coordinate all resources and assignments,
- support incident personnel,
- command and control all response and recovery operations,
- document all activities.

## 10) Training

Personnel who will perform operations must be adequately educated, trained, and equipped. All training sessions should be documented.

## 11) Exercises, Evaluations, and Corrective Actions

Even outstanding programs need to be tested on a regular basis. The best way to accomplish this is through periodic exercises. This will reveal the strengths and weaknesses of the plan. Corrective actions must be taken on any identified deficiency.

## 12) Crisis Communications, Public Education, and Information

The Media can become your best friend or your worst enemy in a crisis situation. Therefore, the strategic decision on how to communicate during



and after a crisis is one of the most essential issues.

A contact facility to deal with media representatives and give press conferences should be established. Press releases and bulletins should be prescribed. The use of Internet websites to distribute information to the media and the public should be considered.

Always prove you have identified the problem and that you are doing something to address it. Employees, customers, and the public will be extremely frustrated and perhaps hostile if they feel you play down or cover up a crisis situation.

Expressing affection and support for victims and their families and friends is mandatory and critical.

Procedures to provide preparedness information to the media and to the Public. Educational programs for those potentially impacted by a hazard (i.e., earthquake, tornado) should be implemented, even for children.

Employees will be reluctant to come to work if their homes are damaged or their families are distraught, no matter how essential or well-trained these people are. In Florida, the Miami-Dade Water & Sewer Department, one of the mayor public utility providers in the U.S., has instituted hurricane preparedness classes for its employees. The training covers family disaster planning, home protecting, evacuation, special needs, dealing with insurance companies and contractors, etc. This knowledge leads to less impact on the employee's life, which equates as less economic impact on the company.

### **13) Finance and Administration**

Disasters are always expensive. Therefore, financial and administrative strategies/funds should be developed to support the program before, during, and after a disaster. The finance departments must be involved in the emergency management programs. An accounting system must be established to track, document, and distribute expenses and reimbursements.

Emergency and crisis situations are often manageable. Using the NFPA standard 1600 enables us to conquer the "disaster dragon." The only solution to save lives, reduce pain and suffering, ensure continuity of critical business functions and services, and to protect our properties, the environment and the economy, is a comprehensive emergency management program. Safety engineers, as the most pro-active group, are in charge of making the difference.