

## FEDERAL DISASTER RESPONSE : IS THE PAST PROLOGUE?

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**Abstract:** A recently completed analysis and chart provides a useful historical perspective on the U.S. emergency management system. The *Disaster Time Line: Selected Milestone Events and U.S. Outcomes (1965-2000)*<sup>1</sup> is a graphic depiction of major disasters in the past 35 years, both natural and industrial, that have affected emergency management policies. Major milestone events were analyzed and their outcomes documented with respect to four categories of actions: (a) major after-action analyses and reports, (b) legislation, (c) executive actions, and (d) major organizational changes. A systematic analysis of the events and their outcome has important political and policy implications for the US emergency management systems, not only at the present time, but for future changes needed to meet new threats and challenges.

Some observations after completing the *Disaster Time Line*: The major after-action reports, analyses, and recommendations resulting from one or more milestone events appear to contribute significantly to the political pressure needed to drive changes in legislation, regulations, policies, and programs—all of which are made in an effort to better respond to future events of that type and size. Most of the U.S. legislation policies and organizations were created in *reaction* to major defining events and after-actions reports and recommendations appear to play an important role in identifying and propelling changes. Two separate, major federal response plans have evolved for dealing with natural and technological/industrial disasters in the U.S.-- the National Contingency Plan and the Federal Response Plan.

As we enter the new century, the complexities of the existing systems, major response plans, and organizational arrangements now in place for emergency management in the U.S. should be reviewed and evaluated. These steps will aid in making revisions, to the extent necessary, in order to meet the new challenges and new threats expected.

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<sup>1</sup> Claire B. Rubin and Irmak R. Tanali are the authors of this chart, which was published in 1999. Descriptive details are available from [www.disaster-timeline.com](http://www.disaster-timeline.com).

## Background

In the past two decades, emergency management has emerged as a more prominent and increasingly professional public responsibility and service in the U.S. Among the reasons for this emergence are greater needs and demands for assistance and services from all domains of society. Increasingly, local, state and the federal governments, as well as the private and not-for-profit sector, are struggling to deal with the widespread destruction and huge financial costs connected with major, damaging urban disasters experienced each year in the U.S. Relatively recently, businesses and industries, notably the insurance industry, have taken greater interest in preventing massive losses and possible business interruptions. The Institute for Home and Business Safety ([www.ibhs.org](http://www.ibhs.org)), for example, has been actively engaged in various hazard mitigation efforts and has been working with federal officials in the recent Public/Private Partnership 2000 program.

The U.S. and many other countries are chafing from the escalating costs associated with disaster response and recovery. In the U.S. both the number of large disasters (i.e., those that warrant a Presidential disaster declaration) and the total cost of the federal outlay for disasters—including expensive events, like Hurricane Andrew (1992) and the Northridge Earthquake (1994)—have reached new heights in the past decade. Moreover, the growing federal payout is in addition to the also increasing payments made by insurance companies, by other levels of government, and by individual victims. For example, in the last 10 years, the number of Presidential disaster declarations ranged from a low of 32 (1993 and 1995) to a high of 75 in 1996. In the 1990s, FEMA issued an average of 41 disaster declarations per year (up from an average of 24 in the 1980s) with one event—the Northridge Earthquake—costing an all-time high of 8 billion dollars of federal outlay.<sup>2</sup> Some of the increase in the growing number of declarations has to do with the criteria for and politics of obtaining a declaration. Similarly, the growing amount of the federal outlay for disasters also has many reasons. Nevertheless, the pattern in the U.S. has been a rapidly growing involvement of the federal government in emergency response and growing federal expenditures for disasters.<sup>3</sup>

## Disaster History and Chronology

The *Disaster Time Line* was begun in early 1999, as a teaching tool for classes in crisis, disaster, and risk management at GWU. It was created to provide a useful graphic depiction of major U.S. disasters (both natural and technological) that are considered defining events in emergency management.

The milestones included both natural and technological events that have affected emergency

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<sup>2</sup> Data from the series “Crisis on the Coast” in the *Philadelphia Inquirer*, March 7, 2000.

<sup>3</sup> For more incident specific information, FEMA keeps track of the *Top Ten Major Disasters Ranked by Relief Costs* in recent years and maintains that information on the agency website at [www.fema.gov/library/dis\\_graph.htm](http://www.fema.gov/library/dis_graph.htm).

management policies in the US. This is an important feature because most people are familiar with one or the other types of events and one or the other of the two major federal response plans (the Federal Response Plan and the National Contingency Plan.) The *Disaster Time Line* does not include all major disaster events since 1965; it includes only those events that are considered major milestones or “defining events” in terms of outcomes at the federal level. Outcomes are noted in four categories of action: (1) major after-action analyses and reports, (4) major organizational changes.<sup>4</sup>

A total of 32 major disasters were chosen for the study. Of those, 16 were major natural disasters (all of which received a presidential disaster declaration) and the other 16 were milestone events concerning oil spills, chemical accidents/incidents, or industrial crises. They are shown in the table below.

**Table 1: Major Milestone Disaster Events (1965-2000):**

<i>NATURAL DISASTERS</i>	<i>INDUSTRIAL/TECHNOLOGICAL</i>
Hurricane Betsy (1965)	Torrey Canyon Tanker Spill (1967)
Hurricane Camille (1969)	Argo Merchant Spill (1976)
San Fernando Earthquake (1971)	Amoco Cadiz Tanker spill (1978)
Hurricane Agnes (1972)	Love Canal (1978)
Rapid City, SD flood (1973)	Three Mile Island (1979)
Tangshan, China earthquake (1975)	Mississauga, (Ontario) Railcar Explosion (1979)
Guatemala Earthquake (1976)	Times Beach, MO (1982)
Mt. St. Helens (1980)	Mexico City Propane Incident (1983)
Mexico City, Mexico Earthquake (1985)	Bhopal, India chemical Release (1984)
Hurricane Hugo (1989)	Chernobyl, USSR radiation Release (1986)
Loma Prieta, CA Earthquake	Ashland PA Oil Spill (1988)
Hurricane Andrew (1992)	Exxon Valdez Alaska (1989)
Hurricane Iniki (1992)	Tokyo, Japan Sarin Gas release (1992)
Midwest Floods (1993)	World Trade Center, NYC bombing (1993)
Northridge, CA Earthquake (1994)	Oklahoma City, OK bombing (1995)
Hurricane Mitch [Central America] (1998)	Y2K—which turned out to be a major international threat but not a disaster

**Time Frame.** The choice of 1965 as the starting year for the *Disaster Time Line* was somewhat arbitrary. One reason for this starting date is that the chart shows that many laws, regulations, and organizations dealing with hazards/ disasters at the federal level existed prior to the formation of both FEMA and the EPA. Further, the 35-year time frame allows one to see the origins and the evolution of both the Federal Response Plan and the National Contingency Plan. The Yr 2000 as an endpoint is especially interesting, because we appear to be at a critical juncture regarding emergency management as we enter the next decade and the next century.

<sup>4</sup> A snapshot view of the *Disaster Time Line* chart is available at: [www.emforum.org/vlibrary/timeline/Slide1.htm](http://www.emforum.org/vlibrary/timeline/Slide1.htm).

In the past 35 years, U.S. emergency management systems and organizations have undergone extensive changes, including the formation of the US Environmental Protection Agency (EPA) and the Federal Emergency Management Agency (FEMA), as well as the evolution of both the Federal Response Plan and the National Contingency Plan. The interactions among events and outcomes are probably the most informative and unique feature of the chart. Relatively little information about the interactions among events and outcomes has been documented anywhere, in part because many capable emergency management officials do not have the time or inclination to write down their experiences. To get at some of the causal relationships, this author interviewed a number of experienced practitioners, who willingly explained what had transpired during major events that they had first-hand knowledge of or experience with since 1965.

### **Evolution of Two Major Federal Response Systems**

During the past 35 years, two major federal response plans, the Federal Response Plan and the National Contingency Plan, have emerged with the purpose of responding to natural and technological/industrial crises and disasters, respectively. Although major response plans, they are only two of the many Federal Response systems; there are several others such as the Federal Radiological Response Plan, telecommunications plan, immigration emergency plan, and others.

### **Brief History of FEMA and the Federal Response Plan<sup>5</sup>**

The Federal Emergency Management Agency (FEMA), an independent agency reporting to the President and tasked with responding to, planning for, recovering from, and mitigating against disaster was created in 1978. By way of background, the 1960s and early 1970s brought massive disasters requiring major federal response and recovery operations by the Federal Disaster Assistance Administration, established within the Department of Housing and Urban Development (HUD). Hurricane Carla struck in 1962, Hurricane Betsy in 1965, Hurricane Camille in 1969, and Hurricane Agnes in 1972. The Alaskan Earthquake hit in 1964 and the San Fernando Earthquake rocked Southern California in 1971. These events served to focus attention on the issue of natural disasters and brought about increased legislation. In 1968, the National Flood Insurance Act offered new flood protection to homeowners, and in 1974 the Disaster Relief Act firmly established the process of Presidential Disaster Declarations.

Nevertheless, emergency and disaster activities were still fragmented. When hazards associated with nuclear power plants and the transportation of hazardous substances were added to natural disasters, more than 100 federal agencies were involved in some aspect of disasters, hazards, and emergencies. Many parallel programs and policies existed at the state and local level, compounding the complexity of federal disaster relief efforts. The National Governor's Association sought to decrease the many agencies with which state and local

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<sup>5</sup> This is based on FEMA's history provided on its website: [www.fema.gov/about/history.htm](http://www.fema.gov/about/history.htm) MA's history

governments were forced to work. To initiate this, the association asked President Jimmy Carter to centralize federal emergency functions.

President Carter's 1979 executive order merged many of the separate disaster-related responsibilities into a new Federal Emergency Management Agency (FEMA). Among other agencies, FEMA has always had the lead for natural disasters, but also in its first few years it was found out how complex emergency management can be. Some early, non-natural disasters and emergencies that FEMA was involved in included the contamination of Love Canal, the Cuban Refugee Crisis, and the accident at the Three Mile Island Nuclear Power Plant. Another usual disaster for FEMA was the Urban Riots in Los Angeles (1991 or 2). Later, the Loma Prieta Earthquake in 1989 and Hurricane Andrew in 1992 focused major national attention on FEMA. The Federal Response Plan (FRP) was signed in 1992 to facilitate the delivery of all types of federal response assistance to states to help them deal with the consequences of significant disasters. FEMA is the lead agency for this coordinated plan, which includes 27 federal departments and agencies.

Within the last two years, in addition to all types of natural hazards, FEMA has assumed responsibility for a wider array of hazard types than has ever been true before, e.g., civil disturbances, counter-terrorism, and weapons of mass destruction (with the addition of the Terrorism Annex to the Federal Response Plan). Today, FEMA stands as the coordinator of a wide array of natural and human-induced disaster events.

#### **Brief History of the National Contingency Plan**

The National Contingency Plan (NCP) is the federal government's blueprint for responding to both oil spills and hazardous substance releases. The NCP is the result of efforts to develop a national response capability and promote overall coordination among the many respondents in the U.S.

The first National Contingency Plan was developed and published in 1968 in response to a massive oil spill from the oil tanker Torrey Canyon off the coast of England the year before. More than 37 million gallons of crude oil spilled into the water, causing massive environmental damage. To avoid the problems faced by response officials involved in this incident, US officials developed a coordinated approach to cope with potential spills in US waters. The 1968 plan provided the first comprehensive system of accident reporting, spill containment, and cleanup, and established a response headquarters, a national reaction team, and regional reaction teams (precursors to the current National Response Team and Regional Response Teams).

Congress has broadened the scope of the National Contingency Plan over the years. As required by the Clean Water Act of 1972, the NCP was revised the following year to include a framework for responding to hazardous substance spills as well as oil discharges. Following the passage of Superfund legislation in 1980, the NCP was broadened to cover releases at hazardous waste sites requiring emergency removal actions. Over the years, additional revisions have been made to the NCP to keep pace with the enactment of legislation. The latest revisions to the NCP were finalized in 1994 to reflect the oil spill provisions of the Oil

Pollution Act of 1990. Under the NCP, Environmental Protection Agency (EPA), is the lead federal response agency for spills/releases occurring in inland water zone, and the US Coast Guard is the lead federal response agency for spills in the coastal zone and Great Lakes.

The National Response System is about 30 years old. The National Contingency Plan (NCP) was started in 1968, making that plan 32 years old. FEMA is only about 20 years old and the Federal Response Plan is only eight years old, dating back to 1992 for its first use. What became clear to the authors is that most often individuals are familiar with one or the other of the two systems; relatively few practitioners or researchers in the emergency management field have a good grasp of the interaction between the two response plans and the attendant authorities, regulations, and key organizational factors pertinent to each.

The following table outlines some of the many factors that determine which plan is invoked and the appropriate response mechanisms set in motion at the federal level.

**Table 2: Federal Response to Natural and Industrial Disasters**

Some of the factors that determine whether the Federal Response Plan or the National Contingency Plan is invoked are as follows:

**What is the nature of the triggering incident/accident?**

- a hurricane, flood, or other major natural hazard/disaster
- oil spill, chemical plant explosion or accident

**Who assesses needs and arranges for response?**

- Who are the key actors and what is the chain of command for determining that higher levels of government are needed?

Example A: mayor, governor, FEMA, president.

Example B: Ship captain, U.S. Coast Guard

**When and why do higher levels of government get involved?**

- What is the threshold for involvement by higher levels of government? (e.g., size of spill; government building; magnitude of threat, risk, exposure)
- What authorities are involved--does the federal government have its own authority to enter or does it have to be asked? Issues of sovereignty of government (state and national)
- What is the request/invitation process for local governments to obtain assistance from State and Federal governments?

**What processes and activities ensue?**

In all cases there are activities to ensure the safety of people and structures; savings lives and reducing injuries are primary concerns. Depending on the type of event, some of the other processes and activities that take place include:

- Natural disasters--damage assessment and human needs assessments
- Industrial crisis--air, soil, water monitoring, clean-up

**With what funding sources?**

- Many federal agencies have their own authority and funds for assisting with disasters (e.g., EPA, Dept. of Agriculture, SBA)
- A Presidential Disaster Declaration "triggers" some federal programs and assistance not available otherwise; it also provides a mechanism for coordinating existing federal resources. (When FEMA manages a presidential disaster declaration, it can "task" other federal agencies to do things, using FEMA money.)

## Observations

Since completing the *Disaster Time Line*, this author (and others) have been contemplating the patterns, interactions, complexities, and difficulties inherent in the existing emergency management systems. It is obvious that the federal emergency management organizations are rather complex and hard to understand by those participating in them and probably duplicative. Many questions arise about the reasons for and purposes of the two major federal response systems, the NCP and the FRP.

Among the author's observations drawn so far are:

- major legislative and policy changes regarding federal emergency management have been reactive; most of the changes are the result of one or more specific disaster events;
- emergency response involves virtually all domains in society--i.e., all levels of government as well as the private and non-profit sectors. Yet, despite years of experience, emergency management is still extremely difficult to do effectively;
- the major national systems, response plans, and organizational arrangements now in place are highly complex and hard to understand, even for the practitioners with operational responsibilities;
- two separate and distinct major response systems have evolved--the national Contingency Plan and the Federal Response Plan; the NCP was created to deal mainly with major oil spills and chemical accidents/incidents and the FRP was created to deal mainly with catastrophic natural disasters. The needs for both and the uses for both have been changing rapidly, just in the past five years.
- there are many questions about how well the existing emergency response systems and major response plans will function for the new types of disasters emerging.<sup>6</sup>

## Recent Experience

The recent Y2K problem was, in fact, a major international threat but it did not turn out to be a disaster. It did, however, provide a loud and expensive wake-up call regarding possible impacts and interruptions for businesses, governments, other organizations and individuals due to technological accidents or incidents in the future. From preliminary analyses, it appears that many important new relationships were forged--between governments and businesses, and among major governments throughout the world. Now that such working relationships

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<sup>6</sup> See Claire B. Rubin, *What Hazards and Disasters are Likely in the 21<sup>st</sup> Century -- or Sooner*. Available on line at: <http://www.colorado.edu/hazards/wp/wp99.html>

have been created, they may be used again for other threats and hazards and disasters in the future.

### What is Ahead?

As we begin this new century, a useful first step would be to analyze the present systems and organizational arrangements in order to divine what changes are needed in the future. There seems to be a need for an effort to streamline, integrate, or otherwise simplify the existing arrangements and response mechanisms.

Engraved in the granite of the National Archives building in Washington, D.C., is the phrase: "What is past is prologue." That issue can be posed to the emergency management community at the start of the new century and the new millennium. Looking back on 35 years of experience, and at the existing legislation, major response systems, and organizational arrangements, we can ask:

- Is this where we want to be currently?
- Is this where we should be in the next century?

Will the existing policy, legislative and organizational foundation for emergency management be adequate, appropriate, and effective for the types of threats/hazards we are facing in the coming century?

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