

United States Fire Administration



Technical Report Series

The Value of Pre-Incident Planning for Effective Emergency Management

**SPECIAL
REPORT**



Federal Emergency Management Agency



United States Fire Administration
National Fire Data Center

The Value of Pre-Incident Planning for Effective Emergency Management

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Federal Emergency Management Agency



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National Fire Data Center**

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OVERVIEW

The concept that planning in advance for major emergency incidents is an important and valuable activity is seldom questioned. While most emergency response agencies engage in pre-incident planning to some extent and have established a level of cooperation and coordination with other agencies, there is no common denominator for the extent to which those efforts are applied. Experience with actual incidents almost invariably indicates the strengths or weaknesses of those efforts, after a major incident occurs.

Interagency cooperation and coordination may be the most essential factor for handling unanticipated situations effectively. In this paper the Federal Emergency Management Agency (FEMA) reviews a series of effectively managed major local emergencies that represent a broad spectrum of circumstances. This review of the factors that contributed to their successful management clearly demonstrates the value of planned interagency relationships, particularly among neighboring jurisdictions, between agencies, and between levels of government.

FEMA offers state and local governments a wide range of resources to help them develop, maintain and improve their emergency preparedness and response capabilities. A description of the major types of assistance available from FEMA is presented later in this report.

Effective emergency planning should provide not only operational plans, but also the ability to locate, mobilize, coordinate and utilize resources that are beyond the normal capabilities of individual organizations. The examples described in this report show over and over that the value of planning extends far beyond the preparation of the plan itself. The relationships developed between organizations and between individuals

during the planning process often prove to be of great importance when an actual major emergency occurs.

Where a specific hazard is known and its extent can be predicted, there may be a relatively straightforward planning process to prepare for an anticipated event. Evacuation plans for nuclear power facilities are an example of this type of problem. The more adaptable and often difficult type of plan to develop is the multiple hazard plan, which must respond to a variety of possible situations, some of which may be impossible to predict. A military fighter aircraft crashing into the lobby of a multi-story hotel would be an unpredictable event, but can be managed by a plan that mobilizes the kinds of resources that would be needed for such a situation and provides a system to command and control their activities

AIRCRAFT INCIDENTS

All Federal Aviation Administration (FAA) categorized airports are required to develop, maintain, and practice disaster plans, anticipating an aircraft incident at the airport. These plans are required to respond to the situation that could be anticipated if the largest type of passenger aircraft normally using that facility were to be involved in an accident at the airfield. Such plans generally involve the participation of emergency response agencies from surrounding jurisdictions, particularly where the airport operates autonomously or semi-autonomously.

The incident which occurred in Sioux City, Iowa, involved a DC-10 wide-body aircraft which made an emergency crash landing at an airport which would not anticipate dealing with an aircraft of this size. The resulting medical emergency involved over 100 patients and was very successfully managed due to the planning that had taken place on the state and local levels, to activate emergency medical resources over a wide region. This planning had anticipated that some event could occur that would require the

maximum utilization of those resources, although the exact nature and location of the incident could not be predicted.

When a military A-7 fighter-bomber crashed into the lobby of a hotel, near the Indianapolis Airport, on October 20,1987, the local emergency response agencies were confronted with an aircraft incident, a multi-story hotel fire, numerous casualties, volatile jet fuel, and the possibility that live ordnance could be involved. An unknown number of employees and guests were reported to be trapped inside the building. The incident occurred off the airport, in Wayne Township, an area served by a volunteer fire department known for effective planning and organization.

The pilot of the A-7D Corsair had notified the Indianapolis Airport tower that he would have to make an emergency landing due to engine failure. The Airport Fire Department had begun its normal response to set up on the intended runway.

Due to low weather ceiling and poor visibility the plane had overshot the intended runway, circled the airport and attempted to fly to an alternate runway. The Fire Department, having seen this, had attempted to follow the aircraft,

The pilot had been unable to maintain altitude and ejected from the aircraft at approximately 500 feet.

The unoccupied aircraft had careened off the roof of a Bank One branch building in the 5600 block of Bradbury Avenue in Wayne Township, crossed the street, hit an embankment, flown another 25 feet and bellied in to the front of the Ramada Inn. The aircraft had shattered, sending the cockpit and engine into the lobby and its wings to the top of the carport and upper floors of the hotel and igniting its approximately 20,000 lbs. of fuel.

Since it had been following the path of the plane, the Airport Fire Department had arrived within one minute of the crash and had begun immediate fire suppression and rescue operations. This proved to be very important in minimizing the number of resulting deaths and injuries.

Wayne Township Fire Department arrived and assumed command of the incident, drawing upon surrounding agencies for mutual aid, coordinated under the Incident Command System.

The fire completely gutted the lobby area of the hotel and caused considerable heat and smoke damage to the east, center and south exit corridors. It also destroyed some vehicles outside the hotel. Amazingly, the main structural members of the building survived in excellent condition. This was due in part to rapid extinguishment and the fact that the main steel support beams had been sprayed with what was believed to be an asbestos material. There was no horizontal spread of the fire except in those areas where doors to offices had been left open. The corridor walls and doors did an excellent job in fire containment.

Nine employees of the hotel were killed, all in the lobby and areas adjacent to the lobby. Four were burned beyond recognition and had to be identified by utilizing medical and dental records. The remaining five died essentially from smoke inhalation and some thermal burns.

Four non-firefighters were injured. One was a female employee of the hotel who had been in the laundry room and escaped through the east end exit of the building. She sustained burns to the face and hands.

One hotel guest had been rescued from the kitchen roof on the south side of the building. He was treated for smoke inhalation and possible fractures.

A third victim received burns over 95 percent of his body. He had entered the hotel to use the telephone and was outside, heading toward his vehicle parked next to the carport, when the plane crashed.

The pilot who had parachuted from the plane landed a few blocks from the scene. He was treated for shock and possible muscle strains.

In addition, three firefighters were injured. All were treated for smoke inhalation.

Wayne Township is one of several jurisdictions which had participated in a regional emergency planning exercise at the Federal Emergency Management Agency's training facility, the Emergency Management Institute at Emmitsburg, Maryland, involving the unified government of the City of Indianapolis and Marion County. Key individuals from all of the agencies participated in the Integrated Emergency Management course which helped them to focus on cooperation and coordination for emergency response. The most valuable aspect of this class, which applied to this incident, was the level of familiarity and mutual confidence that was established and allowed the key individuals to request and provide assistance without hesitation. The class had been held less than one year before the incident occurred and had involved 85 participants from Marion County, including the Mayor of Indianapolis, in anticipation of the Pan Am Games being held in their locale.

A close relationship and a detailed response plan had been developed between the Wayne Township and Indianapolis Airport Fire Departments. On the morning of the incident a regular meeting had been scheduled to review and update the plan. The actual incident was different in many respects from an event that routine planning might have anticipated, but the value and flexibility of a good planning process was clearly demonstrated. [For additional details of this incident, see "Ramada Inn Air Crash and Fire: Wayne Township, Indiana," Report 014 of the Major Fires Investigation Project, United States Fire Administration.]

FLOODING

The need for regional emergency planning was demonstrated, again in Indiana, when major flooding occurred in late 1990 and early 1991. As 1990 ended, a state of emergency was in effect in 72 of Indiana's 92 counties. Over 2,200 homes were evacuated, four deaths occurred, and massive property destruction was reported.

The Indiana Emergency Management Agency provides both planning and operational coordination for the entire State of Indiana. Each county has an Emergency Management Director who is responsible for local planning coordination and for a local Emergency Operations Center (EOC). The State EOC, in Indianapolis, was activated on December 28th and operated for over one month, providing resources in response to requests from the various county EOC's. The State EOC brought together representatives of the Indiana National Guard, Department of Transportation, Health Management Agency, and Environmental Resources Agency, with access to numerous additional public and private sector resources.

At both the state and local levels, Indiana utilizes multi-hazard planning, the goal of which is the ability to respond effectively to whatever type of emergency may occur with the most appropriate resources. Some counties have added specific hazard plans for known risk situations while maintaining the same philosophy. In the flood situation it was up to local agencies to use their available resources as much as possible and then to call upon the State EOC to provide any available resources that could not be obtained locally.

One of the areas that experienced extensive flooding was Vigo County, in the western part of the state, where a levee failed in a completely unexpected location. County Emergency Planning Director Dick Setliff notes that the strong, established working relationships with local law enforcement, fire, and EMS agencies were critical in protecting lives. Instead of confusion there was coordination, as all of the local agencies

had an established basis to work together, coordination was provided by the local EOC, and outside resources could be obtained through the State EOC. He particularly noted the value of a good working relationship with the local news media, resulting in the reporting of factual news reports of the situation and full cooperation when emergency notifications had to be made. He also emphasized the value of the training provided at EMI, which had been attended by 31 members of the local emergency services over five preceding years.

In Vego County arrangements had been established for the Red Cross to care for evacuees and for the Salvation Army to provide food for emergency workers. This type of established role greatly simplifies the problems in managing an emergency situation, because these organizations are ready to perform their designated functions as soon as they are activated by the EOC.

The local Emergency Planning Office tries to anticipate and keep information available on additional resources that can be obtained from outside the normal governmental sources. Prisoners from a federal penitentiary were made available to assist with placing sandbags and were deployed by the EOC to areas where additional labor was needed. A small Hovercraft was borrowed from a local manufacturer to perform rescue operations and was so successful, saving seven lives, that county residents subsequently raised \$13,000 to buy one for future emergency use. Updated lists of resources to call for, everything from shovels to bulldozers, were available at the EOC to meet requests from areas with immediate problems.

While this major situation was being handled, Vego County experienced a completely unrelated hazardous materials incident due to a railroad derailment, which created an additional demand for emergency coordination. This provides further evidence that emergency planning must prepare governmental agencies for many different kinds of situations that may occur without warning and at the worst possible times.

HAZARDOUS MATERIALS INCIDENTS

Hazardous materials incidents may cause massive problems for emergency response agencies, involving not only the immediate role to persons and property, but also the environmental risk factors that are sometimes created when damaging materials leak or are spilled from containers. In many cases, the long-term damage that may result from a leak or spill is the most critical concern.

In Dayton, Ohio, on May 27, 1987, Fire Chief Glenn Alexander made the decision to not apply water to a massive fire involving a paint warehouse and distribution center. The fire occurred in a Sherwin-Williams Paint Warehouse when flammable liquid, accidentally spilled by a workman using a motorized lift, ignited. A spark from the electric motor of the truck probably caused the ignition. The employees present quickly decided that the fire was beyond their ability to extinguish, and all evacuated. The lift truck operator received serious burns and was helped by the employees to put out his flames and escape.

The Dayton Fire Department received the alarm automatically from the fire alarm central station when the plant's sprinklers activated, along with many calls from the public and employees. The fire was through the roof, and the east half of the warehouse was totally involved when the first units arrived. Aerosol cans were raining on the crews and hurtling for distances. The initial concerns were for protecting the drum storage, office, and other exposures, and for firefighter safety. The district chief quickly decided not to let his firefighters hook up the sprinkler supply of the pumphouse, which was close to the wall of the warehouse and exposed to intense heat, danger from exploding and the hurtling cans and the threat of a wall collapse.

The warehouse sprinkler system was overwhelmed almost immediately and had little impact on the main fire.

Chief Alexander assumed incident command early on and ordered that no water be applied to the fire in the warehouse.

The warehouse stood over an aquifer that provides the public water supply for Dayton, Ohio and surrounding areas. The warehouse was within a major well field with wells on and adjacent to the site.

Because of his concern about the water supply well field, Chief Alexander called the director of the water department prior to responding and requested the director to meet him at the scene. Recognizing that the building was so heavily involved in flames that it could not be saved, they had to make a decision on using water to extinguish the fire, knowing that it would be a total loss, or allowing the fire to consume all of the millions of gallons of flammable liquids in the building. If water was not applied there would be a huge release of smoke for several days, polluting the air. If water was used, there was a severe risk of runoff contaminating the underground aquifer which supplies water to the Dayton metropolitan area. It was a difficult choice to make, with only a few minutes to make a critical decision.

The decision, which has been recognized as extremely wise, was to let the fire bum itself out. No lives were in danger and no additional loss would result from the fire, so the decision was made to accept short-term air pollution over long-term damage to the aquifer. This decision could only be made with the knowledge and understanding that comes from a close working relationship with environmental protection and water quality agencies. Their involvement in planning for hazardous materials incidents is essential. [For further information on this incident, see “Sherwin-Williams Paint Warehouse Fire: Dayton, Ohio,” Report 009 of USFA’s Major Fire Investigation Program.]

A different type of situation occurred in Nanticoke, Pennsylvania, on March 24, 1987, when fire involved a metal processing plant. The fire had been discovered when

the foreman at Spencer Metal smelled what he described as burning wire or rubber. He left his first floor office to investigate, but could not see much initially because the anodizing process creates a lot of steam. As he looked up to the third level, he saw a 35-foot flame shooting along the rafter of the roof. He got a fire extinguisher and ran to the second floor level where smoke prevented him from going further. He quickly warned a female employee there about the fire and she left immediately. Then he returned to the first floor to evacuate the other employees. After he was sure everyone had left the building, he reentered the plant to call the fire department. Flames were showing through the roof by the time he went back outside.

Nanticoke's fire headquarters, less than a mile from Spencer Metal, logged in the first alarm at 12:30 a.m.

Spencer Metal is an aluminum finishing business, also called an "anodizing shop." The primary work of the business is to put protective coatings on aluminum and other metals to ward off corrosion. The plant also processes side-view mirrors for all Ford Motor Company trucks and vans. Twenty-nine different hazardous materials such as acids and dyes are used in the plant and stored in the large processing tanks as well as in containers on the premises. Among the hazardous chemicals on site are sulfuric acid, nitric acid, phosphoric acid, acrylic acid, ammonia, caustic soda, and chromic acid. Contact with the vapor from these chemicals can cause reactions ranging from eye irritation to lung damage, depending on the concentration and combination of chemicals.

The local fire department was extremely familiar with the facility and the types of chemicals that were used and stored in the building. Chief Casey, Deputy Chief William Ives, and Firefighter Mark Pavelitz conducted an on-site visit three months earlier to obtain a list of all the chemicals used in the metal processing, to scope out the floor plans, and to prepare drawings.

When the fire occurred, the danger of toxic chemicals being released into the atmosphere was recognized immediately. Sulfuric acid was the major concern. This acid is one of the strongest known, and when combined with water reacts violently, creating a toxic cloud. In small doses, the vaporized acid burns the eyes, throat and skin. Breathing a strong concentration can destroy lung tissue, and can kill. To determine which protective actions for the public were warranted, the department began with a call to CHEMTREC, the chemical industry's emergency information and technical resource center. Based on the list of chemicals used and stored at the plant, which the department was able to supply, CHEMTREC advised them to assume the worst and take action accordingly.

It was decided to evacuate the exposed population within a 2-mile radius of the facility. The decision to evacuate was made only after a careful review of all aspects of the emergency were shared among all the jurisdictions involved.

First of all, moving hospital and nursing home patients carries its own special risks, and evacuation in general gives rise to numerous potential accidents. Secondly, three major and several smaller neighboring jurisdictions would be involved in any decision to evacuate.

The Luzerne County Emergency Management Agency would be in charge of coordinating and lending assistance to local evacuation efforts. Spencer Metal's location at the far western edge of Nanticoke placed sections of contiguous Newport Township in jeopardy. Thus, both the local Nanticoke and Newport Township Emergency Operations Centers would have to be activated. Support from nearby jurisdictions in the form of transportation (buses and ambulances for the evacuation) as well as reception centers for evacuees would draw even more emergency personnel into the situation. The Fire Chief, Mayor, and Emergency Management Director of Nanticoke, the County Emergency Management Agency's Executive Director, and Newport Township officials had to weigh these factors.

After considering advice from Nanticoke Fire Chief Don Casey and consulting separately with the County and City emergency management directors, the Nanticoke Mayor John Haydock decided to evacuate the city in stages. Approximately 15,000 residents were evacuated in all.

The evacuation was coordinated through a plan that had been developed through the Luzerne County Emergency Management Agency to meet requirements for off-site preparedness of areas near a nuclear generating facility. Planners from Luzerne County and its 19 local jurisdictions, however, decided to go beyond that and created a plan that is adaptable to a variety of situations. The Pennsylvania Emergency Management Agency assists local jurisdictions in developing such plans and emphasizes the need to make such planning applicable to multiple hazards and situations, using the Luzerne County plan as a model. The metal processing plant fire created a situation that could be effectively managed through the established plan as a result.

The evacuation plan had been practiced annually and the local population had been educated through regular mailings of information brochures and media coverage. Warning sirens were activated to inform the public of the situation and the Emergency Broadcast Network was activated to provide specific evacuation instructions. Local jurisdictions provided over 100 ambulances to move patients from health care institutions. Shelter sites had been identified and were ready to receive evacuees.

The process was carried out with few problems, clearly demonstrating the value of a well-developed, practiced, and adaptable evacuation plan. It is an excellent example of effective planning, regular exercises, public education, and interagency cooperation all combining to react to a real emergency situation. [For further information on this incident, see "Evacuation of Nanticoke, Pennsylvania, Due To Metal Processing Plant Fire," Report 005 of the USFA Major Fire Investigation Program.]

The industrial areas bordering the Houston Ship Channel is one of the world's largest conglomerations of petrochemical refining and processing facilities, along with numerous other heavy industries. Many of these industrial complexes have their own plant fire brigades and fire departments to deal with the risks created by highly complex installations and hazardous materials. The protection of these properties often requires specialized equipment and a high level of expertise in dealing with complex hazards. The plant fire departments are generally staffed and equipped to deal with anticipated problems, including fires and hazardous material releases on their own premises, but it is not feasible for each to provide its own capability for a catastrophic event or for local jurisdictions to provide the types of protection that these facilities would require.

Since 1955, industries along the Ship Channel have participated in a voluntary membership organization known as Channel Industries Mutual Aid (CIMA), which provides a system of mutual aid among industries, similar to mutual aid systems among local jurisdictions. More than 100 organizations currently belong to CIMA, including the public fire departments in Houston, Pasadena, and other incorporated areas

The CIMA organization provides tactical emergency response resources, such as fire apparatus, hose, foam, and trained firefighters to facilities experiencing an emergency that exceeds their own capabilities. The organization also provides specialist advisors to assist in evaluating situations, directing operations, and coordinating the response of assisting organizations, who are on-call 24 hours a day. Each member is required to provide information for planning purposes and to provide access to CIMA inspectors to identify hazards and ensure that standards are met, in order to maintain their membership status.

Through CIMA, member facilities have access to an almost unequalled resource pool of petrochemical and industrial emergency response capabilities. The system is operated with effective standard operating procedures, its own communications network, and a system to account for the cost of supplies and other expenses. To have access to

the resources, all members must comply with the requirements of the CIMA organization, including procedures for warning the public of dangerous situations.

The value and the capability of the CIMA organization was demonstrated on October 23, 1989, when a huge explosion and massive fire destroyed a portion of the Phillips Petroleum Chemical Complex. The incident resulted in 24 deaths and more than 100 injuries, with explosion debris landing as far as six miles from the plant. Damage has been estimated in the range of \$500 million.

The Phillips Petroleum chemical plant was located in an unincorporated corner of Harris, County, Texas, near Pasadena. It was southeast of Houston, along a shipping channel. The facility was a multi-level structure with the highest tower being approximately 14 stories. There were heavy concrete and steel reinforced buildings within the mesh of pipes and beams that were the outer part of the facility. To the layman the facility would have looked similar to an oil refinery. This facility, however, produced plastics used in a wide variety of items -- approximately one third of the plastics of this type used worldwide.

Within the 800-acre Phillips property the area directly involved in the explosion/fire was approximately 500 feet by 750 feet. Workers were present throughout this area at the time of the blast. In addition, the blast wave did major structural damage to other structures around the complex, some that were over a quarter mile away. The structure where the blast occurred did have an automatic sprinkler system as well as an alarm system. However, the sprinkler system was rendered useless by the explosion, which was measured at 3.5 on the Richter Scale at Rice University approximately 25 miles away. It was estimated to be 4.0 at the epicenter.

An alarm was sounded, but reports indicate it sounded only seconds before the first explosion occurred. This reduced the evacuation plan to basically running for your life in any direction away from the explosion.

There were additional explosions after the first large explosion due to the numerous pipes and tubes that had gases trapped in them.

The volunteer Chief of Pasadena (Texas) Fire Department was working at his full-time job, approximately one mile from the Phillips chemical plant, when the plant blew up. He not only felt the blast, but also saw the fire. He immediately radioed the Pasadena Fire Department to respond as they are not only members of CIMA, but are also contracted with Phillips for fire protection.

The CIMA system responded with the resources that were necessary to confine the fire to the portion of the plant that was initially involved, while utilizing only a portion of the resources that were available to respond.

An all-out Zone 2 alert was issued by CIMA. Approximately 87 fire organizations responded. As the blast knocked out the existing water supply, CIMA brought in two 4,000 GPM pumpers plus a 5,000 GPM jet pumper and had these operational within minutes of the explosion/fire. They drafted from freshwater reservoirs and then laid over 12 miles of 5-1/2 inch line supply water to suppression apparatus. The CIMA chairman set up the central command post, which in turn set up the mutual aid assistance function, which set the staging area where all responding mutual aid equipment and personnel were kept until called for. Central command established communication links with mutual aid agencies by radio or telephone using the pre-fire plan information.

The CIMA plans for fire suppression, medical triage, treatment, and transportation, under an incident command structure, proved to be effective. It was the type of major incident that proves the value of an effective mutual aid network.

The example of CIMA provides proof that effective emergency planning is not confined to the public sector. While public fire departments participate and cooperate

with CIMA, the organization is established and operates within the private sector. It is an effective response to a recognized risk situation, that has been structured to meet local requirements. [For further information see “Phillips Petroleum Chemical Plant Explosion and Fire: Pasadena, Texas,” Report 035 of the Major Fires Investigation Project.]

LESSONS LEARNED

The value of the effective emergency planning can be demonstrated by examining many incidents that have occurred. The examples used in this report are all positive examples that show a positive relationship between good planning and favorable outcomes. The value of multi-hazard planning is particularly evident, since the specific situation that may cause a major emergency event is often impossible to predict. By studying reports of incidents that have occurred in other places, as well as local experiences, planners can identify the kinds of response systems and organizations that have been used to provide effective action in critical situations.

Some of the important points to consider are:

- Effective systems should be planned, documented, practiced, and known to participants. The more that systems are built on everyday standard operating procedures, the more they can be expected to function effectively in a major emergency situation.

- Major emergencies occur in unanticipated ways, locations, and times. Effective plans are adaptable to a variety of situations, by calling upon the elements that are needed in each case.

- In many cases the familiarity and mutual confidence among individuals that are established through planning efforts and exercises are key factors in responding to actual emergency situations.
- Public education and information distribution systems are extremely important in managing an incident that arouses public concern or requires public response. A positive, established relationship with local news media is essential.
- Emergency planning should include both public and private sector organizations and should establish relationships that are ready to apply when the need is recognized

FEMA ASSISTANCE

The Federal Emergency Management Agency (FEMA) provides a variety of resources to state and local governments to help them develop plans for effective emergency management programs and to test the workability of those plans in periodic exercises. These resources include financial assistance, written guidance, technical assistance, and training.

Financial Assistance

Most financial assistance is provided through a Comprehensive Cooperative Agreement (CCA) between FEMA and a state government. For example, via its CCAs with various states, FEMA may provide up to 100 percent of the funding required by the states to employ Population Protection Planners, Facility Survey Engineers, Radiological Defense Officers and Exercise Training Officers. It should be noted that in

some instances, FEMA funding falls short of the total cost of personnel. In these instances, FEMA funds are supplemented with state funds to meet these costs.

Population Protection Planners are responsible for developing state emergency operations plans. In addition, they provide technical assistance, under the direction of the state emergency management director, to local government emergency planners. This includes reviewing local plans for adherence to program guidelines.

Facility Survey Engineers evaluate existing structures throughout the state as potential shelters in an emergency. They identify structures that are suitable for temporary lodging and feeding of displaced citizens or offer protection (e.g., storm or fallout shelter) for citizens from the effects of a disaster. This inventory is continually updated to provide emergency managers with a consistent database of information for use in the event of emergencies.

Radiological Defense (RADEF) Officers assist with emergency operations planning by developing an annex to the state plan which specifically addresses the unique characteristics of radiological emergencies, including those involving nuclear power plant accidents, hazardous materials incidents and nuclear attack. In addition, the RADEF Officer reviews local emergency operations plans to ensure they are consistent with those of the state.

Exercise Training Officers are charged with the scheduling, scenario development and training necessary to ensure that state emergency operations plans are regularly tested and evaluated. In addition, the Exercise Training Officer provides technical assistance and training, as necessary, to help local governments within the state participate effectively in emergency response exercises. Starting in FY 1992, ETO's will also be responsible for evaluating a specified number of jurisdictional exercises each year.

In addition to fully funding these personnel resources, FEMA may provide funds, on a 50-50 matching basis, to support Emergency Program Managers in about 2,600 jurisdictions across the country.

These individuals have overall responsibility for coordinating all the activities and organizations necessary to ensure the community can respond effectively and efficiently to any emergency. This includes overseeing the development of emergency plans; building an emergency management team that integrates the capabilities of public- and private-sector emergency-related groups in the community, coordinating operations and serving as chief of staff to the jurisdiction executive during emergency response; and encouraging and supporting hazard mitigation efforts within the community.

Also available through the CCA mechanism, Disaster Preparedness Improvement Grants (DPIG) help state and local governments maintain or upgrade their capabilities to respond to, recover from and mitigate against natural hazards. These 50-50 matching grants support special projects and activities chosen to suit the needs of each individual state. They can be used to fund participation in Federal response planning efforts, the conduct of a natural-disaster focused exercise or revision of standard operating procedures for use by state agencies and personnel in hazard mitigation or disaster response and recovery operations.

FEMA also provides financial assistance, in the form of training materials and reimbursement for transportation and lodging for state and local personnel who attend training courses offered at the agency's Emergency Management Institute (see Training section below).

Further information about financial assistance available from FEMA through Comprehensive Cooperative Agreements may be obtained from FEMA's regional offices located in Boston, Philadelphia, Atlanta, Chicago, Denton (Texas), Denver, San

Francisco, and Bothell (Washington). See Appendix A for map of FEMA regions and regional offices and addresses.

Written Guidance

In addition to the financial assistance available, FEMA has published a full range of documents which offer step-by-step guidance in emergency planning, response and exercise development. Called "Civil Preparedness Guides (CPGs)," these documents are available free of charge. A comprehensive listing of current CPGs is included in the "FEMA Publications Catalog." Copies of the catalog (Order No. FEMA-20/May 1991) may be obtained from FEMA's regional offices or by writing to FEMA, P.O. Box 70274, Washington, DC 20024.

Technical Assistance

FEMA's headquarters and regional office staffs also are available day-today to provide technical advice and assistance to help state and local officials develop effective emergency operations plans and exercise their emergency response capabilities. Some of this assistance and advice is provided in connection with a number of exercises designed to test the Federal Government's own response plans. These include periodic exercises of the Federal Response Plan, focusing on catastrophic events, and the Federal Radiological Emergency Response Plan, dealing with off-site consequences of a major incident involving a nuclear power plant; CIVEX national security exercises; NUWAX exercises focusing on incidents involving nuclear weapons; and Energy Simulation Games focusing on consequences of major power outages and other energy supply interruptions.

In most cases, these exercises involve the participation of at least one, and sometimes several, states. Often local governments are involved

FEMA can provide its experience and expertise to assist states prepare to effectively carry out their roles in these exercises. In addition, FEMA can help states review exercise performance to extract lessons about the workability of their emergency operations plans and procedures and determine appropriate measures to strengthen any weaknesses identified.

Training

FEMA's Emergency Management Institute (EMI) offers resident and non-resident training for state and local personnel in a variety of disciplines including emergency preparedness and response planning, disaster response and recovery planning, and exercise development and design. Non-resident courses are delivered by the states, through the CCA described earlier.

EMI and the states offer a number of courses designed to help state and local personnel build, maintain and improve emergency operations planning skills. These include:

- "Basic Skills in Emergency Program Management"
- "Emergency Planning"
- "Workshop: State and Local Continuity of Government"
- "Radiological Emergency Preparedness Planning"
- "Hazardous Materials Contingency Planning"

Information about the specific content of these courses, the criteria for selection of students for each and the scheduled offering dates are published each year in EMI's "Catalog of Activities."

The catalog also contains information about EMI's "Community Preparedness/Exercise Programs." This set of courses addresses emergency preparedness

in the total community -- from the chief elected officials to professionals within the emergency response organizations. The curriculum includes:

- The “Disaster Preparedness Seminar,” which allow mayors and city and county managers with their emergency program manager to evaluate existing emergency management plans and programs in their respective communities;

- The “Exercise Design Course,” which focuses on building skills necessary to plan and conduct exercises to test a community’s emergency plan and operational response capability; and

- The “Integrated Emergency Management Course,” which stresses the practical application of management function in an emergency environment through a combination of lectures, workshops and an emergency incident simulation requiring students to perform in a high-stress disaster environment. Specialized versions of this course -- built around national security, hazardous materials or earthquake scenarios -- also are available. This course can be tailored for attendance by the emergency management team from a specific community, including elected or appointed officials as well as personnel from emergency-related agencies and groups within the community.

Copies of the EM1 catalog may be obtained, free of charge, by writing FEMA, P.O. Box 70274, Washington, DC 20024.

Appendix A

FEMA Regional Offices

Address

FEMA Region I

J.W. McCormack Post Office and
Courthouse Building, Room 442
Boston, Massachusetts 02109-4595

FEMA Region II

26 Federal Plaza, Room 1338
New York, New York 10278-0002

FEMA Region III

2nd Floor
105 South Seventh Street
Philadelphia, Pennsylvania 19106-3316

FEMA Region IV

1371 Peachtree, N.E.
Suite 700
Atlanta, Georgia 30309-3108

FEMA Region V

175 West Jackson, 4th Floor
Chicago, Illinois 60601-2698

FEMA Region VI

Federal Regional Center
800 N. Loop 288, Room 206
Denton, Texas 76201-3698

FEMA Region VII

911 Walnut Street, Room 300
Kansas City, Missouri 64106-2085

FEMA Region VIII

Denver Federal Center
Building 710, Box 25267
Denver, Colorado 80225-0267

FEMA Region IX

Building 105
Presidio of San Francisco, CA 94129-1250

FEMA Region X

Federal Regional Center
130 228th street, S.W.
Bothell, Washington 98021-9796

State Services

Connecticut, Maine, Vermont
Massachusetts, New Hampshire,
Rhode Island

New York, New Jersey, Puerto Rico
Virgin Islands

Delaware, Maryland, Virginia, Liberty Square Building,
Pennsylvania, District of Columbia
West Virginia

Alabama, Georgia, Florida, Mississippi,
Kentucky, South Carolina, North Carolina
Tennessee

Indiana, Illinois, Wisconsin, Ohio,
Minnesota, Michigan

Arkansas, Louisiana, Texas, New Mexico,
Oklahoma

Kansas, Nebraska, Missouri, Iowa

Colorado, Montana, Utah, North Dakota
South Dakota, Wyoming

California, Arizona, Nevada, Hawaii,
Pacific Commonwealths and Territories

Idaho, Oregon, Washington, Alaska