Module 4:  

Pre-Incident Planning
Module 4: Pre-Incident Planning

Module Description

This module examines the process of pre-incident planning. The process is covered in logical sequence from establishing objectives and surveying sites, to performing a hazard analysis and risk assessment.

Prerequisites

• Students should have completed a hazardous materials operations level training program.

Objectives

Upon completion of this module, participants will be able to:

<table>
<thead>
<tr>
<th>Objectives</th>
<th>NFPA Standards</th>
<th>OSHA Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>• State the objectives of pre-incident planning.</td>
<td>NFPA 472</td>
<td>29 CFR 1910.120</td>
</tr>
<tr>
<td>• Discuss three reasons for pre-incident planning.</td>
<td>4-3.5</td>
<td>(q) (6) (iii) (A)</td>
</tr>
<tr>
<td>• Explain the process for developing a pre-incident plan.</td>
<td>NFPA 472</td>
<td>29 CFR 1910.120</td>
</tr>
<tr>
<td>• List at least five areas assessed in pre-incident planning.</td>
<td>4-3.5</td>
<td>(q) (6) (iii) (A)</td>
</tr>
<tr>
<td>• Discuss the importance of pre-incident planning in transportation</td>
<td>NFPA 472</td>
<td>29 CFR 1910.120</td>
</tr>
<tr>
<td>corridors.</td>
<td>4-3.5</td>
<td>(q) (6) (iii) (A)</td>
</tr>
<tr>
<td>• Explain how to assess community vulnerability.</td>
<td>NFPA 472</td>
<td>29 CFR 1910.120</td>
</tr>
<tr>
<td>• List resources that may be considered when pre-planning.</td>
<td>4-3.5</td>
<td>(q) (6) (iii) (A)</td>
</tr>
<tr>
<td>• List at least six information resources.</td>
<td>NFPA 472</td>
<td>29 CFR 1910.120</td>
</tr>
<tr>
<td></td>
<td>4-2.2.1</td>
<td>(q) (6) (iii) (A)</td>
</tr>
</tbody>
</table>
**Instructor Preparation**

Obtain all the pre-incident planning forms and materials currently used in the department where you are instructing. If these forms do not exist, use any of the sample forms in Appendix B to this section.

At least two weeks in advance, arrange to conduct a site visit at a facility in the local area. The facility could be a manufacturing plant, a chemical or processing facility, a school, or any other location that is likely to store hazardous materials on site. Go to the location and find out the chemicals that are used or stored there, and obtain the MSDSs for these chemicals. Plan a three to four hour period to conduct the site survey, preferably on the afternoon of the same day you teach this module. **The site visit is extremely important to this module.**

Plan on giving the Prerequisite Quiz at the beginning of this module. If any students fail to answer at least half the questions correctly, they should be directed to read *Training for Hazardous Materials Response: Your Rights and Responsibilities* and Unit 3 of *Hazardous Materials Training for First Responders*. Both programs are available through the IAFF’s Hazardous Materials Department.

**Equipment and Supplies**

- Pre-incident planning forms
- Example pre-incident plans
- List of local, state, and national resources that assist in hazardous materials emergencies
- Material Safety Data Sheets for the chemicals stored or used at the site to be surveyed
- Additional information on the site to be surveyed, such as location maps, past fires or hazardous materials incidents, previous inspection reports, drawings, or permit applications
- Additional chemical reference books
- Maps of the local area
- VCR and Videotape: *Maysville, KY Fertilizer Plant Fire*
- PowerPoint presentation

**Approximate Length**

This module requires a total of seven to eight hours to complete, including four hours of classroom instruction and a three to four hour site survey.
Module 4
Prerequisite Quiz

1. Which of the following statements is true regarding the hazard identification phase of pre-incident planning?
   A. Transportation routes as well as fixed sites should be identified.
   B. Hazard identification is not necessary at sites that use non-bulk quantities of hazardous waste sites.
   C. The EPA, not the fire service, is responsible for identifying hazards at regulated waste sites.
   D. Raw materials are usually more hazardous than processed products.

2. What influence does topography have on the spread of a poisonous gas that is heavier than air?
   A. It usually increases the spread of the gas.
   B. It usually prevents the spread of the gas.
   C. It may either increase or prevent the spread of the gas.
   D. Topography does not influence the spread of the gas.

3. Which of the following is not true regarding weather conditions?
   A. Humidity affects heat-induced illnesses among fire fighters.
   B. Wind can assist first responders by dissipating a dangerous gas.
   C. Control of run-off from a chemical spill is more difficult when it is raining.
   D. Cold temperatures have little effect because of physical demands in fire fighting.

4. The hazard identification phase of pre-incident planning primarily involves:
   A. Developing response tactics
   B. Gathering information
   C. Drills with facility response teams
   D. Analysis of resources

5. Facilities that use only very small quantities of hazardous materials:
   A. Must always follow government reporting procedures
   B. May not need to follow government reporting procedures
   C. Must provide MSDSs to emergency response personnel
   D. Must develop a facility pre-incident plan

6. What is the next step in a pre-incident plan once you have collected all pertinent information?
   A. Develop a generic pre-incident plan for similar industries
   B. Disseminate the plan within the department
   C. Disseminate the plan to relevant government agencies
   D. Develop a comprehensive plan of action
7. If after preplanning a facility, you find you would not have sufficient resources to respond to an incident, your department should:
   A. Purchase the appropriate resources.
   B. Advise the facility of its limitations.
   C. Require the facility to establish its own response team.
   D. Take preventive measures.

8. Generic pre-incident plans can be developed for:
   A. Facilities that store similar products
   B. Facilities that use similar processes
   C. Facilities within a certain geographic area
   D. Each pre-incident plan must be site-specific.

9. Which of the following statements is not true of pre-incident planning?
   A. Preplanned facilities should be prioritized.
   B. MSDSs should be collected during the initial site visit.
   C. A site visit may not be necessary if previous pre-incident plans are available.
   D. All possible sources of assistance must be documented.

10. The right response to an incident is to:
    A. Allow facility response teams to handle the situation first.
    B. Allow state or local government response teams to handle the situation first.
    C. Work within limitations of resources and training.
    D. Be prepared for large-scale incidents by purchasing additional resources.
**Introduction**

**Questions**

1. What is one of the most potentially dangerous sites in your first due area, based on the chemicals stored or used?

2. Have you preplanned this site? If so, how recently?

3. What are five reference sources on databases available to you for researching databases?

4. What are five agency resources you could contact for assistance?

As a hazardous materials team member, you know the importance of being ready to respond to emergencies at a moment’s notice. You are also aware of the combination of knowledge, technical skills, and analytical ability needed to properly deal with difficult, dangerous emergencies. Accordingly, most hazardous materials training focuses on response to emergencies. However, it is essential that these efforts be enhanced and complemented with pre-incident planning activities.

The objectives of pre-incident planning are to prevent and prepare for incidents. Both are important and both save lives. Hazards can be identified and plans can be prepared before life threatening situations occur. Preparedness is not a new concept for fire fighters. For years, fire services have conducted pre-fire plans for buildings and used these plans during drills and actual fires. These same skills are used in pre-incident planning activities for hazardous materials incidents.

As in fire prevention and pre-fire planning, responsibility for these activities must be clearly defined not only at a high administrative level, but also within smaller divisions or response districts. For example, although there may be a person within the Fire Chief’s office who is responsible for all emergency planning, personnel within each battalion or...
company should also be assigned to assist in the development of pre-incident plans for facilities within their response district.

**Why Pre-Incident Plan**

There are three key reasons for pre-incident planning:

- Pre-incident planning provides a mechanism for making decisions calmly and rationally, in advance of an emergency. The emergency incident scene is a poor environment in which to make decisions.

- Pre-incident planning provides an opportunity to gather information prior to an emergency. Timely, accurate information may be difficult to obtain during a hazardous materials emergency.

- Pre-incident planning provides response agencies and personnel with the information needed to act in an effective, well-coordinated manner. Coordination of responders is often a problem at hazardous materials emergencies.

In order to plan, you must identify the types and locations of hazards within the community or jurisdiction. You must also establish procedures to inform authorities of any change in status of a material, its quantity, or its location.

It is essential that you identify *all* facilities housing hazardous materials in your jurisdiction, and obtain all information on the materials.

The first step in conducting pre-incident planning for a fixed site hazardous materials emergency is to determine what materials are stored, handled, processed, or transported at a facility.
Priorities and Objectives

In an ideal world, every conceivable hazardous materials emergency site would be carefully and completely pre-planned. In reality, however, there are constraints of time, personnel, and other resources that make it imperative to assess overall community problems, decide on priorities for pre-incident planning, and target specific sites or areas.

It is important to consider both fixed sites and transportation corridors when prioritizing. Responsible decision-makers must identify the most acute problems and develop a schedule, timetable, or a list of priorities.

When all of the potential problems within a community are considered, the task of planning may seem overwhelming. By establishing priorities and objectives, problem areas can be broken down into more manageable segments. The most severe problems or potential incidents should be addressed before less critical areas.

Compiling Information

Additional information will help you conduct site surveys. Obtain information from public records regarding material usage and waste, traffic patterns, past experience and observation, and other sources of information about each facility. Analyze this information to determine if there are trends or predictable events, or if there is a particular class of hazardous material that poses an unusual or grave threat. It is essential to have as much information “up front” as possible. Also, be aware of chemicals that may not be reportable, or those that may be incompatible with reportable chemicals.

Preparing for On-Site Surveys

Once you have established priorities and tapped and analyzed available sources of information, conduct the on-site surveys. An on-site survey helps you assess relevant information, including the location of utility and product shutoffs, built-in protection systems, and areas where spilled products may pool.
An equally important part of the on-site survey is developing a professional working relationship with the management of the operation being surveyed. It is important to communicate and deal with responsible decision-makers at the facility, such as the plant manager or safety director. It is also important that your department develop rapport with site personnel so that all parties understand the type of information needed. In addition, you should understand plant policies and procedures. Establishing effective communication can be nearly as valuable as gaining technical information during an on-site survey.

The management of a site or facility will usually cooperate with the fire department. However, you may encounter resistance on occasion. These situations must be directly confronted as soon as possible. Communication is the best approach, but it is important to be aware of the laws in each community that empower the fire department to survey a site for pre-planning. On the federal level, the Superfund Amendments and Re-authorization Act (SARA), Title III, Emergency Planning and Community Right-to-Know requires owners to provide information about hazardous materials, emergency response plans, and notification regarding unexpected chemical releases. State and local laws vary by community. For example, in some locations, only certain quantities of some hazardous materials may need to be reported. In other areas, all hazardous materials may need to be reported, regardless of quantity.

It is not always readily apparent that a site contains hazardous materials. The facility may be small and contain only very small quantities of hazardous materials (below the mandatory reporting levels), or the owners and operators may not be aware of the hazards presented by the materials they are using. You may have to be a detective and, at times, look at what the facility is manufacturing, how supplies are stored, and what kind of equipment is being used. Also, you need to be able to recognize indicators that hazardous materials may be present.

Before you conduct an inspection at the site, review all available information on the facility, including:

- Previous inspection reports
- Drawings
• Permit applications
• History of fires or chemical incidents
• MSDSs or lists of chemicals
• Maps
• Adjacent vulnerable locations

To develop a comprehensive hazardous materials pre-plan for a facility, consider the following characteristics:

• Location/exposures
• Type of construction
• Type of business/process
• Water supply
• Building access
• Communications and security
• Electrical/gas shutoffs
• Water shutoffs and sprinklers
• Location/type/quantity of chemicals and their hazards
• Emergency medical support available
• Work schedules/number of employees
• Emergency resources on site/contingency plans
• Protective clothing available on site
• Vulnerability of surrounding area/ability to evacuate
• Adjacent facilities and other exposures that can not be evacuated or shut down
• Compatibility of resources
• Waterways and storm sewers, particularly those that empty into waterways

After locating the facilities and identifying the hazardous materials within each facility, you must identify the characteristics of the materials and the condition at the site to predict the consequences of a possible release and the appropriate actions. The range of a hazardous release depends not only on the amount of material released but also on the properties of the material. Technical experts, including toxicologists, may be needed to predict the areas of vulnerability in different situations.

Types of Potential Hazards

As part of identification, you should consider not only the types of materials but also the quantities and potential combinations of the materials. Review labels and other markings. Whenever possible, obtain Material Safety Data
Sheets (MSDSs). Accurate identification of materials provides baseline information needed to accomplish other areas of pre-incident planning.

Chemical Hazards

Once materials have been identified, assess the hazards posed by each material and those that could result from a combination of these materials. Flammability, reactivity, and other hazards can be assessed using a variety of sources. Shipping papers and MSDSs provide some data regarding physical hazards, but confirm this information with other sources, such as reference books and computer databases. Site personnel may also be good sources of this information. You will need to know:

• Are there any chemicals that are extremely hazardous that should be identified in an emergency before responders arrive?
• Are some sections of the facility more vulnerable than others because of the presence of chemicals?
• Are there indications that some chemicals may not be reported?
• Are there non-reportable quantities of chemicals present?

Assessment of the general hazards of materials leads to a more specific review of potential medical and environmental effects.

Potential Health and Environmental Effects

Among the most critical areas of pre-incident planning are the specific health and environmental effects of materials that could be involved in a hazardous materials emergency. The safety of emergency personnel as well as civilians is directly related to health effects of materials. As you identify the hazards, identify measures that can be taken to prevent exposure and provide appropriate medical treatment. You will need to know:

• If a release occurs, what is the product’s likely escape route?
• What are the vulnerable populations around the facility?
• Is there a database(s) available for tracking runoff or plume dispersion?
While not as critical as health effects, potential effects to the environment also need serious review. In addition to sources of information previously mentioned, consult local health departments and environmental agencies to draw on local technical expertise.

**Features of the Site or Area**

When you assemble information about a site or transportation corridor, include activities that take place prior to, during, and after visiting the site or area. There are a number of sources for this type of information, ranging from plans, permits, and photos, to actual observations made as part of the visit. When gathering this information, maintain a balance. Too little information has limited value, while too much detail is cumbersome.

**Access for Emergency Responders**

Information regarding access to and exit from a site or area is essential to a comprehensive pre-incident plan. You will need to know:

- What is the quickest and safest response route?
- What are all the points of entry?
- What types of barriers exist?
- Have emergency escape routes been planned?

This kind of information is not only valuable for fixed sites, but is also exceptionally important when planning for a transportation incident. Some areas along transportation corridors (e.g., bridges, waterways) may not be easily accessible to fire department equipment. Special preplanning may be needed for emergency response vehicles. For example, an incident on a major highway may require you to temporarily stage vehicles some distance away until police halt traffic and shut down the highway. Pre-incident planning can help responders identify and resolve these access problems.

**Geography and Topography**

The location of incidents may also present major problems for fire fighters. The presence of large bodies of water, steep hills, high buildings, confined spaces, very porous or
very compact soil, hot asphalt, or uneven terrain all increase the likelihood of injuries and add to the complexities of dealing with an incident. Wherever possible, make note of any potential problems with terrain or access.

**Physical Conditions**

Noise is a major but often overlooked hazard. It often interferes with communications between the entry team and command. Noise may be generated by sirens, radios, explosions, air horns, machinery, or venting from containers under pressure. Long-term hearing loss can be prevented if appropriate procedures are followed at all times and hearing protection is used. Noise also interferes with communications between the entry team and command. Electrical hazards are also common at incidents at fixed sites.

Injuries from tripping, falling, entrapment, or being hit by objects are usually preventable. You can protect yourself and your co-workers by being very aware of your surroundings, watching where you walk, and understanding the physical limitations imposed by personal protective equipment.

Flammable, toxic, or oxygen deficient/enriched areas can be expected in emergency response, especially when hazardous materials are present. Pre-incident planning may help reveal areas such as confined spaces where oxygen levels are likely to be deficient. In addition, your department must have procedures for monitoring oxygen levels, particularly at hazardous materials incidents.

**Exposures**

Hazardous materials emergencies often expand beyond the initial hazard area. Runoff, vapor clouds, and fire exposures are a few of the potential avenues for spreading a hazard. An additional function of pre-incident planning is to provide information on exposures. What are the potential exposures? In what ways are they vulnerable? How can these exposures be protected? Do the exposures themselves need to be pre-incident planned? In developing this type of information it is essential to contemplate all potential scenarios and to consider factors such as weather and topography.
Protective Systems and In-House Resources

Pre-incident planning helps you identify the protective features of a site and to recognize the abilities and limitations of any in-house response forces. Understanding their capabilities and limitations in advance helps you assign roles and avoid misunderstandings during an emergency. You will need to know:

- What control devices (such as lagoons or holding ponds) are in place to help during an incident?
- Is any special fire protection equipment available?
- Are there storm sewers that empty into waterways?
- Are there areas unconnected to storm/sanitary sewers?
- Can any sections of the facility be isolated from HVAC equipment?
- What type of technical control devices (such as emergency shut-off valves) are built into the process system?

So far, pre-incident planning has addressed materials and their effects. The site or area, access, exposures, protective features, and in-house response capabilities have been assessed. The three final areas of pre-incident planning focus on response capability, decision-making, and strategy, rather than on information gathering.

Emergency Response Capability

A key task in pre-incident planning is the objective assessment of the capabilities and limitations of response personnel in dealing with potential emergencies at a fixed site or in a particular transportation corridor. Personnel, apparatus, specialized equipment, mutual-aid, and sustainability are among the issues that must be considered. You will need to know:

- Who will be available for on-site technical assistance?
- Who is the liaison for the fire department?
- Does the facility have a response team? If so, how many trained personnel will be available during an emergency?
- To what level have site personnel been trained?
- Does the facility have special protective clothing for specific chemicals? If so, how many sets of clothing are available?
• Are facility personnel familiar with the fire department’s incident management system?
• What type of communication system can be used for both facility personnel and fire fighters during an emergency?
• Are other information resources (such as technical specialists or chemists) available off-site?

The key to assessment is an educated judgment regarding emergencies that could occur, and an honest appraisal of what response forces could reasonably be expected to accomplish in such situations.

Assessment of Key Decisions

Effective pre-incident planning assists in decision-making both prior to an emergency and at the incident scene. For example, if there is a significant leak or fire at a site, is the best approach to merely evacuate an area, protect exposed properties, and allow events to run their course, or is it appropriate to assume more aggressive control activities? These kinds of decisions should be considered and addressed as part of the pre-incident planning process. Discussing these kinds of decisions without the pressures and distractions present at an emergency incident scene can be of great benefit. Making these types of decisions in advance can help you avoid conflict at the scene since key players will have advance knowledge of the decisions and can adjust their expectations accordingly.

Appropriate Control Strategies

Once key decisions have been assessed in pre-incident planning, develop overall strategies. Strategies must take into account all the information that has been collected, the combined capabilities of available emergency response resources, risks, and potential benefits. These factors must be considered along with overall priorities of saving lives and protecting property and the environment.

The development of a strategy provides a goal-oriented framework for emergency response. The strategy should state the goals of the response effort, and tactics should be developed to achieve these goals.
Planning for Transportation Emergencies

Transportation corridors, including waterways and highways, must also be pre-planned. Remember that transportation corridors run through cities as well as around them, and deliveries of hazardous materials are often made to inner city facilities. Consequently, you should preplan for transportation incidents within the city limits as well. Some parts of the preplanning process differ slightly, but the importance and functions are equally applicable, as illustrated in the following scenario.

Located in a suburban community is a gasoline tank farm and terminal facility. Several major oil companies have operations within the facility. Not only are the tank trucks of these companies loaded and dispatched from this facility, but tank trucks from a number of local oil distributors and government agencies also load here. Every year, tens of thousands of tank trucks loaded with flammable liquids leave the facility.

When these trucks leave the facility they must take one of two routes. Most leave the facility, travel down a four lane undivided road, then turn left through a busy intersection that is bordered by shopping centers and a high school. They then proceed down a four lane divided highway until they reach an interstate cloverleaf about two miles away. At this point, these vehicles must negotiate “tight turn” ramps and merge into the traffic of one of the busiest sections of interstate highway in the country.

There is a high probability that a transportation-related hazardous materials emergency will occur someplace in this corridor. In fact, experience has shown that a serious emergency—typically a rollover with an associated leak and/or fire—takes place about once every five years. In transit, carriers of hazardous materials are usually routed around urban areas. However, this doesn’t mean that hazardous materials will not be delivered to locations within a city. You will still need to plan for transportation incidents within the city limits.
Depending on your geographic area, you may find that different types of hazardous materials are carried as seasons change. For example, in western states, the same cargo tanks haul LPG in the winter and anhydrous ammonia in the summer. (The tanks are purged and retrofitted with different safety relief devices when the cargo changes.) It would be helpful to find out the types of products that are commonly carried in your area throughout the year. Without question, pre-incident planning is as necessary in the transportation environment as it is for fixed sites.

**Training and Testing**

Pre-incident plans should be tested annually through drills. They should also be updated annually. Facilities frequently change or add raw products or processes without notifying the fire department. Personnel and phone numbers change as well. Last year’s point of contact may no longer work at the facility.
Hazard Analysis and Risk Assessment

The next step in this process is hazard analysis and risk assessment. This is similar to the process used during incidents, except that you have the time to do a more thorough job. Hazard analysis is the process during which you:

- Identify the potential for an incident that will cause damage to life, property, or the environment
- Identify vulnerable areas
- Analyze the risk and probability of this occurring

Use the information obtained from inspections and pre-incident planning visits, along with data received from facilities, reference textbooks, and other agencies. This will help you determine what risk an incident would present to fire service personnel, civilians, property, and the environment.

In order to adequately assess these risks, specific information is needed on:

- Transportation frequency and routes
- Specific risks to people and property in vulnerable areas
- Past experiences with the material and the facility
- Control and safeguard mechanisms currently in place
- Site-specific information

For planning purposes, consider the population and facilities located within the susceptible areas. Information about the vulnerable population can be the basis for planning activities such as evacuation.

After a site visit, estimate the residential population, as well as the number of persons who may be present at commercial, industrial, and recreational facilities. Note high volume roadways and water supply sources, as well as facilities with dependent populations or where population density is especially high.

Community characteristics can be used to determine the relative degree of vulnerability. The level of vulnerability
depends on the anticipated difficulty of protecting the population and on the number of persons that could be exposed if a hazardous materials incident were to occur.

Hazard analysis should help you identify possible scenarios for various incidents at a particular location. You can then determine what actions are appropriate for your department in these scenarios and the resources that would be needed.

During hazard analysis, remember that the seasons may affect the frequency of hazardous material incidents as well. For example, agricultural areas are subject to more frequent pesticide releases during warmer months.

**Activity**

**Analysis of Resources**

Resources include everything you need to control an incident such as personnel, supplies, equipment, and funding. Resources can also include knowledge, expertise, access to other agencies, and regulatory processes. OSHA, EPA, and the Department of Transportation have produced regulations with which all First Responders should be familiar.

After you determine what resources will be needed to appropriately respond to an incident, inventory your actual resources. If there is a discrepancy between the two, develop a plan to work within limitations or to obtain the necessary resources. This could include measures to prevent an incident, reduce the risks, limit the consequences, or improve response capabilities.

Your available resources and training are among the most critical factors that dictate how you handle hazardous materials incidents. One fire department may have the resources and training to handle large scale hazardous materials incidents, while another jurisdiction’s response may be to identify the hazard, establish a hazard zone, deny entry, and request assistance from a neighboring community. For yet another, the best approach may be to identify
the hazard and take steps to prevent the incident. None of these approaches is wrong. **The right response is working within limitations of resources and training. The wrong response is going beyond those limitations.**

Incidents that consume large amounts of resources do not occur frequently. Rather, it is the smaller incidents, such as a spilled five-gallon pail, a leaking gas tank on a car, or plastic burning in a building, that represent the most frequently encountered hazardous materials incidents. Ironically, these are the incidents for which there is the least planning and the ones that are often overlooked as health and safety risks.

During the preparation phase, list and categorize all possible sources of assistance, as well as all available equipment and supplies. Inventory the capabilities and limitations of your department or company. You can then decide who, or what agency, will be able to augment your resources.

Outside agencies that may be of assistance include:

- Other fire departments and hazardous materials response teams
- Public health agencies
- Chemists and industrial hygienists
- State and local environmental agencies
- Industry response organizations
- The water authority
- Universities with chemists, toxicologists, and public health specialists
- Federal agencies (EPA, OSHA, and Coast Guard)
- Hazardous materials cleanup companies
- Utility companies
If these outside agencies and organizations are to be used, you must know their limitations and capabilities and incorporate them into the pre-planning process. As you develop an emergency response plan, consult each resource and include that organization in the process.

Large numbers of resources are needed less frequently when pre-incident planning activities lead to prevention. Prevention may not be as exciting or as interesting as hazardous materials response, but it does save valuable resources, including lives and health.

**Activity**
Information Resources

While pre-incident planning assists in identifying hazardous materials and developing action plans to minimize the potential dangers, conditions may change during an actual emergency. For example, there may be unexpected hazards in the form of unidentified substances, products of combustion, or combinations of materials. Therefore, it is also important to develop sources of information and technical guidance that can provide assistance during an emergency response. Though this is not an endorsement, the following is a list of public and private sources of this information.

Assisting Government Agencies

Federal

Assistance from federal agencies, most notably the Environmental Protection Agency (EPA) and the Department of Transportation (DOT), can be helpful when conducting pre-incident planning activities. These agencies have significant regulatory responsibility and highly relevant expertise in this area. The EPA maintains a national response team to assist local and state agencies during a major hazardous materials response. Appendix E lists the EPA offices for each region in the U.S. Federal agencies generally handle only large-scale incidents.

State

Each state has a governmental organization (or a number of organizations) with responsibilities relating to environmental and hazardous materials. They are helpful because they have regular contact with federal agencies and should be able to notify organizations when needed. For example, a state
Department of the Environment may know a Tactical Assistance Team based in a regional EPA office.

**Local**

At the local level there may be other agencies that can provide valuable assistance when preparing pre-incident plans for particular hazardous materials emergencies. Examples are public works departments and universities.

**Private Companies and Organizations**

In addition to government agencies, there are many private companies and organizations that can assist in both developing information for pre-incident plans and in emergency response. In general, these organizations fall into the following categories.

**Manufacturers and Shippers**

Many manufacturers and shippers maintain telephone help lines and, in some cases, also provide response resources. This information is essential in developing a plan, as well as resolving an incident. Many of these businesses are also responsible for cleanup activities. Developing key contacts within firms that are manufacturing, shipping, or handling hazardous materials in your community will ensure access to these resources.

**Private Mutual-Aid Associations**

In some areas where there are a number of businesses involved in handling hazardous materials, there are also private mutual-aid associations. These associations assist in control and cleanup of hazardous materials. Each organization must be assessed individually in terms of the assistance it can provide.
Other Resources

While the public and private entities described here can be of assistance, it is also essential to have ready sources of information at hand, both while conducting pre-incident planning activities and when dealing with an emergency. More and more frequently, resources are being coordinated electronically via data repositories and notification/response systems. The B.O.L.D.E.R. project in Arizona, described in Appendix C, is one such system.

Activity
Application Exercise
Application Exercise

You will need

- Copies of departmental pre-incident plan forms; OR:
- Copies of the sample pre-incident plan form on the following page

- Information from the facility you will be surveying, such as:
  - Existing site emergency plans and inspection reports
  - Facility layout diagrams
  - Permit applications
  - Telephone numbers of responsible parties at the site and other contact information
  - MSDSs or lists of chemicals used and stored at the site
  - Facility policies and procedures
  - Number of employees and work schedules

- Additional information:
  - Previous reports on incidents at the site to be surveyed
  - Local maps
  - Descriptions of adjacent vulnerable locations
  - Information on traffic patterns

Preparation

This exercise is intended to help students practice identifying chemical hazards and collecting pertinent information for pre-incident planning. Well in advance of class, research the facilities in the local area that store or use hazardous chemicals. Contact the plant manager or other appropriate person to arrange a site visit with your students. The facility should store or use a range of chemicals representing several DOT categories.

Divide the class into small groups and have them work together before and during the site survey. Prepare them for the visit by allowing them to thoroughly review the site materials you have obtained and make notes. Distribute copies of the departmental pre-incident plan forms or the sample pre-incident planning form on the following page. After the survey, reconvene the class and discuss each group’s reactions to the hazards they identified. Discuss the appropriate actions to take if a release occurs at the facility.
SAMPLE PRE-INCIDENT PLAN FORM

SECTION I - LOCATION INFORMATION

Location: ______________________________________________________________________

Building/Site Name: ______________________________________________________________________

Type of Business: ______________________________________________________________________

Building Size: Frontage: __________ x Depth: __________ = Area: __________

Owner: ______________________________________________________________________

Owner’s Address: ______________________________________________________________________

Owner’s Telephone: _______________________________

Owner’s Agent: ______________________________________________________________________

Agent’s Address: ______________________________________________________________________

Agent’s Telephone: _______________________________

Emergency Contact: ______________________________________________________________________

Emergency Telephone: _______________________________

Cleanup Contractor: ______________________________________________________________________

Prepared by: ______________________________________________________________________

Remarks/Special Information (number of shifts, security on premises, special orders, other
contacts not listed above, etc.)
SECTION II - BUILDING INFORMATION

Specific Property Use: ___________________________________________________________

Number of Stories: ______________

Age of Building: ______________

Construction Type: 1st Type _________% 2nd Type _________ %
1 = Fire Resistive 5 = Heavy Timber
2 = Protective Non-Combustible 6 = Unprotected
3 = Protected Ordinary 7 = Unprotected Ordinary
4 = Protected Wood Frame 8 = Unprotected Wood Frame

Relevant Features: ________________________________________________________________________

Type of Roof Construction: ____________________________________________________________________

Standpipes:
Exterior Connections: ____________ Locations: ______________________________

Interior Connections: Wet _________ Dry _____________

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sprinkler Systems:
Exterior Connection Location: _________________________________________________
% Coverage: Wet: ______ Dry: ______ Both: ________
Shutoff Location: ____________________________________________________________
Valves:
Open (Y/N)______ Supervised (Y/N)______ Zoned Areas (Y/N)______

Other Extinguishing Systems (halon, CO₂, dry powder, etc.):
Type: ________________________________________________________________________
Location: ____________________________________________________________________

Warning System:
Detection Type (heat, smoke, both): ________________________________
Connection to Alarm (local, central, master, auxiliary): ____________________________
Alarm Company: __________________________ Telephone: ________________________

Access and Entrances:
SECTION III - BUILDING HAZARDS

Common Hazards - List any common hazards (heating system, combustibles, transformers) in the building and their locations

Utilities - List type and location of utility shut-offs (natural gas, electrical)

Special Hazards - List any special hazards (acetylene, propane tanks, other chemicals) in the building and their locations, including types of containers and any containers

(attach MSDS for each chemical)

SECTION IV - PROCEDURES TO BE USED IN THE EVENT OF A MAJOR SPILL/RELEASE

(attach copies of both the facility plan and your department’s plan)

SECTION V - HYDRANT LOCATIONS AND PLACEMENT OF APPARATUS

(attach a copy of the site plan with hydrants and preferred apparatus locations highlighted)

SECTION VI - TARGET HAZARDS IN THE AREA TO BE PROTECTED/EVACUATED

(attach a copy of the site plan with specific hazards/vulnerable areas identified and highlighted)

SECTION VII - SITE PLAN

(attach a copy of a detailed site plan (8 1/2" x 11" only)
Pre-Incident Plan Form
Facility Diagram

In the space below, diagram the facility layout and identify the locations of:

- Hazardous materials
- Emergency shut-off valves
- Built-in protection systems
- Water supply
- Building access and egress
- Vulnerable areas/reactive materials
Action Statement
Action Statement

You have just completed the fourth module of the Hazardous Materials Technician course. The topics included:

- Why pre-incident planning is necessary
- Hazard analysis and risk assessment
- Federal, state, local, and private information resources

Knowing how you respond to emergencies in your first due areas, would you change your actions or habits based on the information covered in this module? Listed below are some suggested actions. Some you may already do, and others may not fit your work environment. If there are actions you have not done in the past, do you think you will begin doing them as a result of this training?

As a result of this training I will:

1. Become more active in pre-incident planning/schedule more frequent site surveys
2. Identify chemical hazards I may have overlooked in the past
3. Develop more accurate and complete forms for pre-incident planning
4. Collect additional information for pre-plans
5. (Create my own action statement)

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
Appendix A

Activities
Hazard Analysis Activity 1

Use the form below to describe the hazards at the site you have been assigned.

Instructor Note:

Divide the class into four groups and assign each group one of the facility sites shown on the following pages. Have each group use the accompanying form to identify the hazards and develop the site.

<table>
<thead>
<tr>
<th>Visible Hazards</th>
<th>Method of Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Other Potential Hazards

<p>| |</p>
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
GRID #21171
5644 E. WESTOVER
CHEMICAL COMPANY

1 TON CHLORINE GAS CYLINDERS

10% CAUSTIC SODA SOLUTION IN 300 GAL TANK USED TO CAPTURE GASES DURING REFILLING OF SMALL CYLINDERS
Phosgene Case Study Activity 2

Have the students read the following newspaper articles and discuss the questions that follow.

Gas Injures Workers at Maryland Ice Plant
Freon Leak Hurts Workers at Giant Food Plant

By Martin Weil
Washington Post Staff Writer
Wednesday, December 16, 1998

Six Giant Food employees were overcome by fumes last night, along with two firefighters who went to their rescue, after a leak of refrigerating gas inside an ice-making plant at the grocery chain’s distribution center in Landover, authorities said. Three of the workers were in critical condition.

At one point, five people, including the two firefighters, had fallen unconscious inside the plant in the 6300 block of Sheriff Road, according to Prince George’s County fire and rescue department spokesman Mark Brady. One of the Giant employees remained unconscious last night at Prince George’s Hospital Center, authorities said.

Late last night, Brady said, authorities were still searching inside the highly automated, 25,000-square-foot ice plant for the cause and source of the leak. Brady said the county’s hazardous materials specialists initially suspected that the problem involved a leak of Freon gas, a common refrigerant. However, he said the nausea, dizziness and lightheadedness experienced by those exposed to the leak were not typical of Freon. Exposure to high Freon levels, he said, tends to cause asphyxiation.

Brady said late last night that specialists “were working on the theory” that phosgene, a more toxic gas that has been used as a chemical warfare agent, may have been produced by the exposure of leaking Freon to a flame in a water heater. Barry F. Scher, a spokesman for Giant, said all leaking gas was contained in the ice plant, and that none of the bagged ice produced in the plant was affected by the leak.

Scher said the sequence of events in which the employees and firefighters were overcome began when an alarm was triggered — apparently some time between 7 and 8 p.m.— inside the ice-making plant. A maintenance worker then went to the area involved — described as a zone of pipes and ice-bagging machinery — to investigate.

The man, according to Scher, did not come back. Others then went to the plant to check on him, and they, too, were overcome. Based on information provided by Lesa Eser, a nursing official at the hospital center, one of them apparently was able to drag one or more of the others away from the most hazardous area.
According to Brady, when the first two ambulance workers reached the scene, they found an unconscious man in his early sixties. While they were there, Brady said, two other Giant employees lost consciousness, and finally, the ambulance workers themselves collapsed.

But before they did, he said, they called for help.

That brought other rescue personnel to the scene, and the injured were taken to the hospital. Besides the three listed in critical condition late last night, Eser said the other five people admitted to the hospital were in serious condition. They were the two firefighters and three Giant employees.

Eser said five other firefighters were brought to the hospital for evaluation. She said she expected them to be released after treatment.

© Copyright 1998 The Washington Post Company
Firefighter Exposed to Gas Recounts Ordeal at Ice Plant

By Philip P. Pan and Scott Wilson
Washington Post Staff Writers
Thursday, December 17, 1998; Page C01

Firefighter Vernard Green had barely made it 20 feet into the cold, refrigerated air of Giant Food’s sprawling ice manufacturing plant in Landover on Tuesday night when he saw two men lying face down on the concrete floor near tiny pools of vomit. They were unconscious, overwhelmed by an as yet unidentified gas, and when Green knelt down to see if they were breathing, it suddenly hit him, too.

“I started seeing lights and spots, and then I felt woozy. I almost felt like passing out,” he recalled yesterday from his bed at Prince George’s Hospital Center. “There was an odor, but it was real slight. I didn’t know what it was, but I knew to get the heck out of there as fast as possible. “This was some bad stuff.”

Green and other Giant employees ultimately were able to drag the two unconscious workers from the building. But the nature of the “bad stuff” that sent him, his partner and four Giant workers to the hospital — and nearly killed one of the employees — remains a mystery.

Federal investigators who joined the probe yesterday said they have discovered a pin-size hole in the plant’s refrigeration system that may have released Freon or a similar substance commonly found in household refrigerators and air conditioners into the building. Such gases are usually harmless, but investigators said the one in question may have come in contact with a natural-gas pilot flame in a nearby water heater and been transformed into another chemical, phosgene, a vapor so toxic that it was used as a weapon in World War I before its military use was banned.

Investigators also were examining whether part of the refrigeration system might have overheated and caused Freon to break down into phosgene, which can cause nausea; throat constriction; skin inflammation; irreversible eye damage, including blindness; and even death.

Two of the Giant employees remained in the hospital in fair condition last night, and a third was listed in good condition. Another Giant worker was released yesterday afternoon, as were Green and his partner, firefighter Joan Godfrey. Seven other people — a mix of firefighters and Giant employees — were treated and released Tuesday night.

The plant, which makes ice for sale in Giant stores, remained shut down yesterday as Giant engineers attempted to repair the leak. Company officials said that they believe no ice had been tainted by the gas and that none of it had been shipped for sale in any case. Meanwhile, county officials and investigators from the U.S. Chemical Safety and Hazard Investigation Board toured the 25,000-square-foot facility, located to the rear of Giant’s 140-acre distribution center in Landover, and tried to figure out what happened.
Phil Cogan, a spokesman for the safety board, said investigators were examining similarities with refrigeration-related incidents in Oklahoma and Oregon this year that resulted in a total of three deaths. The sequence of events Tuesday night began with an apparent “mechanical problem” at the plant that left an “oil residue” near a machine that fills bags with ice, said Barry F. Scher, a spokesman for Giant. Scher said one worker went to the area but never returned. He said that two others then went to find him and that when they discovered him unconscious, one stayed there while the other went to find a phone to summon help.

The call went to Giant’s security center, and officials there dialed 911 before heading toward the ice plant, Scher said. Green and Godfrey, two county firefighters assigned to an ambulance based at the Chapel Oaks station, were just leaving Prince George’s Hospital Center when they got the call about 7:30 p.m. Green, 26, said he went into the building first, discovered the two unconscious men, then retreated quickly as the fumes hit him. He ran into his partner on the way and told her to head back also. “I yelled, ‘Get out! Get out!’ ” Green said. “I told her to call for extra units because it was clear we had a Hazmat situation.”

But Godfrey already knew. Green said she reported seeing a white haze in the building and then suffering a burning in her throat and lungs. Outside, the two firefighters staggered back to their ambulance and administered oxygen to themselves. “Right after I got myself back together, I realized, damn, we need to go get the two guys unconscious in there,” Green said. He said he saw a group of Giant employees headed toward the building, stopped them and picked three to accompany him back inside. “We needed to get in and get them out as fast as possible,” he said. “So we held our breath, went on in and we dragged them out.”

Then, Green said, another Giant employee stumbled out the door. The man had passed out after calling for help, Green said, but somehow managed to regain consciousness and escape.

Three fire engines from the Kentland station arrived about five minutes later, and firefighters on board described finding four or five Giant employees sprawled out in the parking lot.

“They weren’t looking too good, and the ambulance crew was trying to take care of them, but they weren’t doing well either,” said Richard Riley, one of the chiefs at the Kentland station. “They were trying to administer aid but were coughing and gagging. It was clear they needed help.”

Riley said he immediately established a “hot zone” to prevent others from being contaminated, then sent a team of firefighters equipped with breathing apparatus into the building. They found no one else in the plant, which Riley described as a “huge, huge big freezer full of machinery.”

Riley said the firefighters measured the oxygen level inside at 16 percent — well below the 21 percent in normal air. “We immediately thought it was Freon or ammonia,” he said.

Later, though, hospital officials sent back word that the patients exposed to the gas were suffering severe symptoms that were inconsistent with mere exposure to Freon or ammonia, said fire
department spokesman Mark Brady, adding that at least three slipped into critical condition before they began improving.

The department’s hazardous materials team shut down the flow of Freon and natural gas in the building, ventilated it and returned control of the facility to Giant Food officials about midnight without identifying the gas or finding the leak, Brady said.

It was not until yesterday that investigators found the tiny hole in the refrigeration system. “The kind of thing we’re looking at would be the refrigeration system, the chemicals involved, and the hazards that exist when they come in contact with each other,” said Cogan, spokesman for the investigation board.

“It is toxic as hell,” John Ondove, a University of Maryland professor of chemistry, said yesterday of phosgene. “If you were trying to destroy Freon in a furnace, phosgene would be one of the things you’d worry about.”

At the heart of the investigation, though, is a family of synthetic gases first manufactured by the chemical companies decades ago. Freon was designed as a substitute for ammonia, a noxious, colorless gas once used in household refrigerators. Freon is odorless and colorless. But most important, it is completely inert, meaning it does not react with other gases or materials at room temperature.

That property makes it highly useful as a coolant. But Freon became a target of the environmental protection community in the early 1970s as a chief culprit behind the hole in the ozone layer, which filters out harmful radiation from the sun. Freon does not decompose in the Earth’s atmosphere, and federal law now prohibits its sale in the United States.

Wayne Chin, a chemistry expert at the New York Hall of Science, said Freon has been cited in past industrial accidents as the precursor to harmful phosgene. “It has been known to happen,” Chin said. “Phosgene has the same kind of carbon backbone. In any industrial accident where you have gas and heat as a catalyst, nothing stays inert.”

Cogan said the investigation board, which started up this year, is studying two cases that may also have involved refrigeration gases turning poisonous. In May, one worker died and three were injured when they were overcome with fumes at the Oregon Freeze Dry Factory in Albany, Ore. Cogan said the incident may have involved a type of toxic ammonia from the refrigeration system.

In September, two employees at the Houston-based Enerpipe Corp. in Springer, Okla., were found frozen in a pit near a pipeline they were checking for leaks. Investigators believe the second employee died after being overcome by toxic fumes — perhaps caused by the refrigeration gases — while trying to rescue his colleague.

© Copyright 1998 The Washington Post Company
**International Chemical Safety Cards**

**PHOSGENE**

PHOSGENE  
Carbonyl chloride  
Chloroformyl chloride  
\((\text{cylinder})\)  
\(\text{COC12}\)  
Molecular mass: 98.9

CAS #: 75-44-5  
RTECS #: SY5600000  
ICSC #: 0007  
UN #: 1076  
EC #: 006-002-00-8

**TYPES OF HAZARD/EXPOSURE**

<table>
<thead>
<tr>
<th>HAZARD/EXPOSURE</th>
<th>ACUTE HAZARDS/SYMPTOMS</th>
<th>PREVENTION</th>
<th>FIRST AID/FIRE FIGHTING</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIRE</td>
<td>Not combustible. NO open flames. NO contact with oxidizing agents, ammonia.</td>
<td>Foam, powder, carbon dioxide. NO water. In case of fire in the surroundings: remove all phosgene-containing vessels. In case of fire: keep cylinder cool by spraying with water but NO direct contact with water.</td>
<td></td>
</tr>
</tbody>
</table>

**EXPOSURE**

* *INHALATION*  
Cough. Laboured breathing. Shortness of breath. Sore throat. Corrosive. Redness. Skin burns. ON CONTACT WITH LIQUID:  
Cold-insulating gloves. Protective clothing. Remove contaminated clothes. ON FROSTBITE: rinse with plenty of water, do NOT remove clothes. Rinse skin with plenty of water or shower. Refer for medical attention. Wear protective gloves when administering first aid.
Corrosive.  
Redness. Pain.  
Blurred vision.  
* EYES

Face shield, or eye protection in combination with breathing protection.

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.

* INGESTION

SPILLAGE DISPOSAL
Evacuate danger area!
Consult an expert!
Ventilation. Cautiously neutralize spilled liquid with sodium bicarbonate or equal mixture of soda ash and slaked lime.
(extra personal protection: complete protective clothing including self-contained breathing apparatus).

STORAGE
Fireproof if in building. Isolated from work area. Separated from strong oxidants, and ammonia. Cool. Dry.

PACKAGING & LABELLING
T+ symbol  
R: 26  
S: 7/9-24/25-45  
UN Haz Class: 2.3  
UN Subsidiary Risks: 8

SEE IMPORTANT INFORMATION ON BACK

ICSC: 0007

Prepared in the context of cooperation between the International Programme on Chemical Safety & the Commission of the European Communities © IPCS CEC 1993
PHOSGENE

ICSC: 0007

PHYSICAL STATE; APPEARANCE: COLOURLESS GAS. COLOURLESS TO YELLOW COMPRESSED LIQUEFIED GAS, WITH CHARACTERISTIC ODOUR.

PHYSICAL DANGERS: The vapour is heavier than air and may travel along the ground.


OCCUPATIONAL EXPOSURE LIMITS (OELs):
TLV: 0.1 ppm; 0.40 mg/m3 (ACGIH 1992-1993)
PDK: 0.5 mg/m3 (USSR 1987)

PORTANT

DATA

IMPORTANT

ROUTES OF EXPOSURE: The substance can be absorbed into the body by inhalation.

INHALATION RISK: A harmful concentration of this gas in the air will be reached very quickly on loss of containment.

EFFECTS OF SHORT-TERM EXPOSURE: The substance is corrosive to the eyes, the skin, the respiratory tract. Inhalation of this gas may cause lung oedema (see Notes). Rapid evaporation of the liquid may cause frostbite. Exposure to high level may result in death. The effects may be delayed. Medical observation is indicated.

EFFECTS OF LONG-TERM OR REPEATED EXPOSURE: The substance may have effects on the lungs, resulting in fibrosis, impaired functions.
PHYSICAL PROPERTIES

Boiling point: 8°C
Melting point: -118°C
Relative density (water = 1): 1.4

Solubility in water:
reaction
Vapour pressure, kPa at 20°C: 161.6
Relative vapour density (air = 1): 3.4

ENVIRONMENTAL DATA

It is strongly advised not to let the chemical enter into the environment.

NOTES

The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation is therefore essential. Immediate administration of an appropriate spray, by a doctor or a person authorized by him/her, should be considered. The odour warning when the exposure limit value is exceeded is insufficient. Do NOT spray water on leaking cylinder (to prevent corrosion of cylinder). Turn leaking cylinder with the leak up to prevent escape of gas in liquid state.

Transport Emergency Card: TEC (R)-107
NFPA Code: H4; F0; R0;

ADDITIONAL INFORMATION

ICSC: 0007

© IPCS, CEC, 1993

PHOSGENE

IMPORTANT LEGAL NOTICE:

Neither the CEC or the IPCS nor any person acting on behalf of the CEC or the IPCS is responsible for the use which might be made of this information. This card contains the collective views of the IPCS Peer Review Committee and may not reflect in all cases all the detailed requirements included in national legislation on the subject. The user should verify compliance of the cards with the relevant legislation in the country of use.
Questions

1. Discuss how preplanning may have altered the outcome of this incident.

2. Analyze the risks and benefits of the actions taken by the fire fighters.

3. As a group, discuss and develop a general strategy for responding to the incident.

4. Identify facilities in your jurisdiction that may produce similar hazards in an emergency.
Ammonium Nitrate Case Study Activity 3

Ammonium Nitrate Case Study
Memphis, Tenn

Emergency dispatchers reported a fire at a large warehouse approximately 1.8 million square feet in area. Fire fighters responded to the building, which was in a heavily industrialized area. The building had been preplanned and the facility was known to store large quantities of ammonium nitrate. When fire fighters arrived at the scene, they observed a small amount of black smoke coming from the upper part of the building.

The building was completely open on one side. The warehouse is so large a railroad track was built into the upper section of the building for unloading dry bulk rail cars. Inside was a “mountain” of loose ammonium nitrate, about 125 feet high at the highest point. Fire was visible around a conveyor belt in the upper portion of the building. The belt had ignited and rubber was dripping onto the ammonium nitrate below.

Fire fighters responded with four engines, two ladder trucks, two battalion chiefs, one division chief, and the hazardous materials team. The first engine on the scene laid a preconnected 1 3/4” hose line up the side of the pile of ammonium nitrate. The second engine set up a 5” supply line. Aware of the hazards involved, personnel acted quickly to extinguish the fire, which was still small. They wore structural fire protective equipment with SCBA, and were decontaminated with plain water at the scene. Gear was contained for commercial cleaning, and fire fighters were advised of proper personal hygiene procedures.

Although ammonium nitrate has developed a reputation since the Oklahoma City bombing, keep in mind that this product will not burn. However, it does provide oxygen to fuel a fire. The ammonium nitrate used for explosives is mixed with fuel oil to produce a hydrocarbon base, which will burn. The increased oxygen supply from the ammonium nitrate causes a rapid, oxygen-enriched burning. Blasts can be initiated by blasting caps. As the fuel begins to burn, the rapid production of oxygen results in an explosion.

Because they understood the characteristics of ammonium nitrate, fire fighters made the educated, appropriate decision to quickly extinguish the blaze.
Questions

1. How would you have reacted in a similar situation?

2. What departmental resources would be available to you?

3. Are there any facilities in your area that would store such large quantities of ammonium nitrate? How about other oxidizers?
Appendix B

Sample Pre-Incident Planning Forms
SAMPLE PRE-INCIDENT PLAN FORM

SECTION I - LOCATION INFORMATION

Location: ____________________________________________________________

Building/Site Name: _________________________________________________

Type of Business: ____________________________________________________

Building Size: Frontage: _______ x Depth: _______ = Area: _______

Owner: _____________________________________________________________

Owner’s Address: ___________________________________________________

Owner’s Telephone: ______________________________

Owner’s Agent: _____________________________________________________

Agent’s Address: ___________________________________________________

Agent’s Telephone: ______________________________

Emergency Contact: ________________________________________________

Emergency Telephone: ______________________________

Cleanup Contractor: ________________________________________________

Prepared by: _______________________________________________________

Remarks/Special Information (number of shifts, security on premises, special orders, other contacts not listed above, etc.)
SECTION II - BUILDING INFORMATION

Specific Property Use: _______________________________________________________________

Number of Stories: __________

Age of Building: __________

Construction Type: 1st Type ________%  2nd Type ________%

1 = Fire Resistive
2 = Protective Non-Combustible
3 = Protected Ordinary
4 = Protected Wood Frame
5 = Heavy Timber
6 = Unprotected
7 = Unprotected Ordinary
8 = Unprotected Wood Frame

Relevant Features: _______________________________________________________________________

Type of Roof Construction: ____________________________________________________________

Standpipes:

Exterior Connections: __________  Locations: ____________________________________________

Interior Connections:  Wet _________  Dry _________

<table>
<thead>
<tr>
<th>Location</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sprinkler Systems:

Exterior Connection Location: ____________________________

% Coverage:  Wet: ______  Dry: ______  Both: ______

Shutoff Location: ______________________________________

Valves:

Open (Y/N)_____  Supervised (Y/N)_____  Zoned Areas (Y/N)_____

Other Extinguishing Systems (halon, CO₂, dry powder, etc.):

Type: ______________________________________________________

Location: __________________________________________________

Warning System:

Detection Type (heat, smoke, both): ______________________________

Connection to Alarm (local, central, master, auxiliary): _____________________

Alarm Company: ______________________________ Telephone: ________________

Access and Entrances:
SECTION III - BUILDING HAZARDS

Common Hazards - List any common hazards (heating system, combustibles, transformers) in the building and their locations

Utilities - List type and location of utility shut-offs (natural gas, electrical)

Special Hazards - List any special hazards (acetylene, propane tanks, other chemicals) in the building and their locations, including types of containers and any containers

(attach MSDS for each chemical)

SECTION IV - PROCEDURES TO BE USED IN THE EVENT OF A MAJOR SPILL/RELEASE

(attach copies of both the facility plan and your department’s plan)

SECTION V - HYDRANT LOCATIONS AND PLACEMENT OF APPARATUS

(attach a copy of the site plan with hydrants and preferred apparatus locations highlighted)

SECTION VI - TARGET HAZARDS IN THE AREA TO BE PROTECTED/ EVACUATED

(attach a copy of the site plan with specific hazards/vulnerable areas identified and highlighted)

SECTION VII - SITE PLAN

(attach a copy of a detailed site plan (8 1/2" x 11" only)
Appendix C

City of Phoenix

Fire Department
Special Operations

The B.O.L.D.E.R. Project Summary

The Arizona Emergency Response Commission, Maricopa Local Emergency Planning Committee, City of Phoenix and the City of Phoenix Fire Department have partnered with the U.S. EPA Region IX and the U.S. EPA Common Sense Initiative, Computer/Electronics and Metal Finishers sectors on an innovative project. The Basic On Line Disaster/Emergency Response or B.O.L.D.E.R. Project is designed to improve and enhance the timeliness and accuracy of emergency response information.

The B.O.L.D.E.R. Project incorporates the following goals:

1. Develop a single, comprehensive Disaster/Emergency Response Plan from the eight federally required plans using the National Response Team “Guidance for Integrated Contingency Planning” documents as a guide.

2. Conduct a needs assessment based in part on the recommendations of the Arizona Department of Environmental Quality High Risk/High Priority Committee report of November, 1995. The needs assessment will incorporate input from community members, workers, industries, emergency responders and regulatory agencies.

3. Develop an electronic, needs based, tiered, simplified emergency response program using the computer software version of the City of Chandler Fire Department’s Hazardous Material Management Plan as a guideline.

4. Ten industrial representatives from the circuit board manufacturing and metal finishers industries will develop company disaster/emergency/response plans using the software.

5. The disaster/emergency response plans will then be electronically linked to community representatives, state, county, and city agencies to test the viability of the information and its electronic dissemination.

6. Completion is scheduled for early 1997, with a final report outlining the successes and challenges of the project.

The B.O.L.D.E.R. Project has solicited the involvement of numerous citizen committees, non-governmental agencies, federal, state, county, and city response/emergency/regulatory agencies, as well as industry representatives and workers.
CONNECTING ARIZONA ELECTRONICALLY

The B.O.L.D.E.R. Project
(Basic On Line Disaster Emergency Response)

Community Right to Know

Data Warehouse

Reporting Requirements

Hazardous Materials Industries

Emergency Responders

Responding Fire Companies
Appendix D

SARA Title III
SARA Title III Factsheet:

THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

OVERVIEW:

The Emergency Planning and Community Right-to-Know Act of 1986 establishes requirements for Federal, State and local governments and industry regarding emergency planning and “Community Right-to-Know” reporting on hazardous and toxic chemicals. This law builds upon EPA’s Chemical Emergency Preparedness Program (CEPP) and numerous State and local programs aimed at helping communities to better meet their responsibilities in regard to potential chemical emergencies. The Community Right-to-Know provisions will help increase the public’s knowledge and access to information on the presence of hazardous chemicals in their communities and releases of these chemicals into the environment. States and communities, working with facilities, will be better able to improve chemical safety and protect public health and the environment.

Nothing in this document should be construed to indicate that EPA has determined states have Title III authority over Indian reservations. For purposes of this document, definition of the terms “State” and “Governor” includes the “Indian Tribe” and “Tribal Chairman.” EPA has issued a final rule on July 26, 1990, regarding the application of the Emergency Planning and Community Right-to-Know law to Indian lands.

The Emergency Planning and Community Right-to-Know Act (also known as SARA Title III or EPCRA) provisions has four major sections: emergency planning (Section 301-303), emergency release notification (Section 304), community Right-to-Know reporting requirements (Sections 311-312) and toxic chemical release inventory (Section 313). Information from these four reporting requirements will help States and communities develop a broad perspective of chemical hazards for the entire community as well as for individual facilities.

SECTIONS 301-303: EMERGENCY PLANNING:

The emergency planning sections are designed to develop State and local governments’ emergency response and preparedness capabilities through better coordination and planning, especially within the local community.
STATE EMERGENCY RESPONSE COMMISSION

The Emergency Planning and Community Right-to-Know Act required the Governor of each state to designate a State Emergency Response Commission (SERC). Many SERCs include public agencies and departments concerned with issues relating to environment, natural resources, emergency services, public health, occupational safety, and transportation. Also, interested public and private sector groups and associations with experience in emergency planning and Community Right-to-Know issues may be included in the State commission. At this time, all governors have established SERCs.

The SERC must also have designated local emergency planning districts and appointed Local Emergency Planning Committees (LEPC) for each district. SERCs have designated over 4,000 local districts. Thirty-five State commissions chose counties as the basic district designation (often with separate districts for municipalities) and ten SERCs designated substate planning districts. The SERC is responsible for supervising and coordinating the activities of the LEPC, for establishing procedures for receiving and processing public requests for information collected under other sections of SARA Title III, and for reviewing local emergency plans.

LOCAL EMERGENCY PLANNING COMMITTEES

This LEPC must include at a minimum, elected state and local officials, police, fire, civil defense, public health professionals, environmental, hospital, and transportation officials as well as representatives of facilities subject to the emergency planning requirements, community groups, and the media. As soon as facilities are subject to the emergency planning requirements, they must designate a representative to participate in the planning process.

The LEPC is required to complete a number of tasks, including establishing rules, giving public notice of its activities, and establishing procedures for handling public requests for information; however, the LEPC’s primary responsibility is to develop an emergency response plan by October 17, 1988 and review it at least annually thereafter. In developing this plan, the LEPC evaluates available resources for preparing for and responding to a potential chemical accident. The plan must:

» Identify facilities and transportation routes of extremely hazardous substances;

» Describe emergency response procedures, on-site and off-site;

» Designate a community coordinator and facility coordinator(s) to implement the plan;

» Outline emergency notification procedures;
» Describe methods for determining the occurrence of a release and the probable affected area and population;

» Describe community and industry emergency equipment and facilities and identify the persons responsible for them;

» Outline evacuation plans;

» Describe a training program for emergency response personnel (including schedules);

» Present methods and schedules for exercising emergency response plans.

EMERGENCY RESPONSE PLANS.

In order to assist the LEPCs in preparing and reviewing plans, Congress required the National Response Team (NRT), composed of 15 Federal agencies with emergency response responsibilities, to publish guidance on emergency response planning. This guidance, the “Hazardous Materials Emergency Planning Guide, (NRT-1)” was published by the NRT in March 1987. In 1990, the NRT also published “Developing Hazardous Materials Exercise Program: A Handbook for State and Local Official (NRT-2)” to help assist SERCs and LEPCs exercise their emergency response plans.

The emergency response plan must be initially reviewed by the SERC and, at least, annually by the LEPC. Regional Response Teams (RRTs), composed of federal regional officials and state representatives, may review the plans and provide assistance to the LEPCs upon request by the SERC or LEPC.

Planning activities of LEPCs and facilities should be initially focused on, but not limited to, the 360 extremely hazardous substances published in the Federal Register. Plans should be comprehensive, addressing all hazardous materials of concern and transportation as well as fixed facilities. The list includes the threshold planning quantities (minimum limits) for each substance (see Code of Federal Regulations (CFR) Part 40, Section 355). Through rulemaking, EPA can revise the list and threshold planning quantities based on the toxicity, reactivity, volatility, dispersability, combustibility, or flammability of substance.

Any facility that has present any of the listed chemicals in a quantity equal to or greater than its threshold planning quantity is subject to the emergency planning requirements. In addition, the SERC or the Governor can designate additional facilities, after public comment, to be subject to these requirements. Covered facilities must notify the SERC and LEPC that they are subject to these requirements within 60 days after they begin to have present any of the extremely hazardous substances in an amount equal to or in excess of threshold planning quantities.
In addition, the SERC must notify the EPA regional office of all facilities subject to the emergency planning requirements, including facilities designated by the SERC or the governor.

SECTION 304: EMERGENCY NOTIFICATION.

Facilities must immediately notify the LEPCs and the SERCs likely to be affected if there is a release into the environment of a hazardous substance that exceeds the reportable quantity for that substance. Substances subject to this requirement are those on the list of 360 extremely hazardous substances as published in Federal Register (40 CFR 355) as well as the more than 700 hazardous substances subject to the emergency notification requirements under CERCLA Section 103(a)(40 CFR 302.4). Some chemicals are common to both lists. The CERCLA hazardous substances also require notification of releases to the National Response Center (NRC), which alerts federal responders.

Initial notification can be made by telephone, radio, or in person. Emergency notification requirements involving transportation incidents can be met by dialing 911, or in the absence of a 911 emergency number, calling the operator. This emergency notification needs to include:

» The chemical name;

» An indication of whether the substance is extremely hazardous;

» An estimate of the quantity released into the environment;

» The time and duration of the release;

» Whether the release occurred into air, water, and/or land;

» Any known or anticipated acute or chronic health risks associated with the emergency, and where necessary, advice regarding medical attention for exposed individuals;

» Proper precautions, such as evacuation or sheltering in place;

» Name and telephone number of contact person.

Section 304 also requires a written follow-up emergency notice as soon as practicable after the release. The follow-up notice or notices must:

» Update information included in the initial notice;

» Provide information on actual response actions taken;

» Provide advice regarding medical attention necessary for exposed individuals.
If LEPCs are not yet formed, releases should be reported to appropriate local response officials.

SECTION 311-312: COMMUNITY RIGHT-TO-KNOW REQUIREMENTS.

There are two Community Right-to-Know reporting requirements within the Emergency Planning and Community Right-to-Know Act. Section 311 requires facilities that must prepare material safety data sheets (MSDS) under Occupational Safety and Health Administration (OSHA) regulations to submit either copies of their MSDSs or a list of MSDSs chemicals to:

The LEPC, The SERC, and, The local fire department with jurisdiction over the facility.

If the facility owner or operator chooses to submit a list of MSDS chemicals, the list must include the chemical or common name of each substance and must identify the applicable hazard categories. These hazard categories are:

» Immediate (acute) health hazard,
» Delayed (chronic) health hazard,
» Fire hazard,
» Sudden release of pressure hazard, and,
» Reactive hazard.

If a list is submitted, the facility must submit a copy of the MSDSs for any chemical on the list upon the request of the LEPC or SERC. Also, EPA has established threshold quantities for hazardous chemicals below which no facility must report. The current thresholds for Section 311 are:

» For extremely hazardous substances: 500 pounds or the threshold planning quantity, whichever is lower.

» For all other hazardous chemicals: 10,000 pounds.

The initial submission of the MSDSs or a list of MSDSs chemicals was due on October 17, 1987, or three months after the facility is required to prepare or have available an MSDS under OSHA regulations. Currently, OSHA regulations require all employers to have or prepare MSDSs for their chemicals. Under the Emergency Planning and Community Right-to-Know statute, facilities newly covered by the OSHA regulations must submit MSDSs or a list of MSDSs chemicals within three months after they become covered.
An MSDSs or a revised list must be provided when new hazardous chemicals become present at a facility in quantities at or above the established threshold levels after the deadline. A revised MSDS must be provided to update the original MSDS if significant new information is discovered about the hazardous chemical.

Reporting under section 312 requires a facility to submit an emergency and hazardous chemical inventory form to the LEPC, the SERC, and the local fire department with jurisdiction over the facility. Hazardous chemicals covered by section 312 are those for which facilities are required to prepare or have available an MSDS under OSHA's Hazard Communication Standard and that were present at the facility at any time during the previous calendar year above specified thresholds.

The specific threshold quantities established by EPA for Section 312 for hazardous chemicals, below which no facility must report, are:

- For extremely hazardous substances: 500 pounds or the threshold planning quantity, which is lower.
- For all other hazardous chemicals: 10,000 pounds.

The inventory form incorporates a “two-tier” approach. Under Tier I, facilities must submit the following aggregate information for each applicable hazard category:

- An estimate (in ranges) of the maximum amount of chemicals for each category present at the facility at any time during the preceding calendar year;
- An estimate (in ranges) of the average daily amount of chemicals in each category; and,
- The general location of hazardous chemicals in each category.

The Tier II report contains basically the same information as the Tier I, but it must name the specific chemical. If requested by an LEPC, SERC, or local fire department, the facility must provide the following Tier II information for each substance subject to the request:

- The chemical name or the common name as indicated on the MSDS,
- An estimate (in ranges) of the maximum amount of the chemical present at any time during the preceding calendar year,
» A brief description of the manner of storage of the chemical,

» The location of the chemical at the facility, and,

» An indication of whether the owner elects to withhold location information from disclosure to the public.

EPA published a uniform format for the inventory forms on October 15, 1987. However, because many state commissions have additional requirements or have incorporated the federal contents in their own forms. Tier I/II forms should be obtained from the SERC. The Tier I information must be submitted for covered facilities on or before March 1 annually.

The Tier II form may be sent by the facility instead of a Tier I form. EPA believes that Tier II reports provide emergency planners and communities with more useful information and encourages facilities to submit Tier II forms. The public may also request Tier II information from the SERC and the LEPC. The information submitted by facilities under Sections 311 and 312 must generally be made available to the public by LEPCs and SERCs during normal working hours.

SECTION 313: TOXIC CHEMICAL RELEASE REPORTING.

Section 313 of the Emergency Planning Community Right-to-Know Act of 1986 requires EPA to establish an inventory of routine toxic chemical emissions from certain facilities. Facilities subject to this reporting requirement are required to complete a Toxic Chemical Release Inventory Form (Form R) for specified chemicals. The form must be submitted to EPA and those state officials designated by the governor annually on July 1. These reports should reflect releases during the preceding calendar year.

The purpose of this reporting requirement is to inform the public and government officials about routine releases of toxic chemicals to the environment. It will also assist in research and the development of regulations, guidelines, and standards.

The reporting requirement applies to owners and operators of facilities that have 10 or more full-time employees, that are in Standard Industrial Classification (SIC) codes 20 through 38 (i.e., manufacturing facilities) and that manufacture (including importing), process, or otherwise use a listed toxic chemical in excess of specified threshold quantities.

Facilities manufacturing or processing any of these chemicals in excess of 25,000 pounds are required to submit the form by July 1st of the following calendar year. Facilities otherwise using listed toxic chemicals in quantities over 10,000 pounds in a calendar year are required to submit toxic chemical release forms by July 1 of the following calendar year. EPA can revise these threshold quantities and covered SIC codes.
The list of toxic chemicals subject to reporting consisted initially of chemicals listed for similar reporting purposes by the States of New Jersey and Maryland. There are over 300 chemicals and categories on these lists. Through rulemaking, EPA can modify this combined list (a current toxic chemical list may be obtained through the EPCRA hotline).

The final Toxic Chemical Release Form and regulations were published in the Federal Register on February 16, 1988. (NOTE: EPA has revised and updated the Toxic Chemical Release Form since that time.) The following information is required on the form:

» The name, location and type of business;

» Off-site locations to which the facility transfers toxic chemicals in waste for recycling, energy recovery, treatment or disposal;

» Whether the chemical is manufactured (including importation), processed, or otherwise used and the general categories of use of the chemical;

» An estimate (in ranges) of the maximum amounts of the toxic chemical present at the facility at any time during the preceding year;

» Quantity of the chemical entering each medium—air, land, and water—annually;

» Waste treatment/disposal methods and efficiency of methods for each waste stream;

» Source reduction and recycling activities;

» A certification by senior facility official that the report is complete and accurate.

Reports are sent to EPA and designated state agencies. EPA established and maintains a national toxic chemical inventory based on the data submitted. The public is able to access this national database and obtain the data through other means. See the Public Access Section of this document for further details.

POLLUTION PREVENTION LAW.

The Pollution Prevention Act of 1990 has significantly expanded the Toxics Release Inventory (TRI). It requires collection of mandatory information on source reduction, recycling, and treatment beginning with the 1991 reporting year. The new requirements include reporting of the following information:
» Amounts released or disposed on-site or off-site, the quantities from the previous year, the quantities anticipated for the next two years;

» Amounts recycled on-site and sent off-site for recycling, the quantities from the previous year, the quantities anticipated for the next two year;

» Amounts treated on-site and sent off-site for treatment, the quantities from the previous year, and the quantities anticipated for the next two years;

» Amounts used for energy recovery on-site and sent off-site, quantities from the previous year, and the quantities anticipated for the next two years;

» Types of source reduction practices implemented and the techniques used to identify those practices;

» Methods of recycling used on-site;

» Production ratio or activity index to track changes in the level of economic activity at a facility;

» Amount of releases resulting from one-time events not associated with production processes.

OTHER SARA TITLE III PROVISIONS.

TRADE SECRETS.

Section 322 of the Emergency Planning and Community Right-to-Know Act addresses trade secrets as they apply to emergency planning, Community Right-to-Know, and toxic chemical release reporting. A facility may withhold the specific chemical identity on these submittals. No trade secrets are allowed to be claimed under Section 304 of the statute. The withholder must show that:

» The information has not been disclosed to any person other than a member of the local planning committee, a government official, an employee of the withholder or someone bound by a confidentiality agreement;

» Measures have been taken to protect the confidentiality and the withholder intends to continue to take such measures;

» The information is not required to be disclosed to the public under any other Federal or State law;
Disclosure of the information is likely to cause substantial harm to the competitive position of the withholder;

The chemical identity is not readily discoverable through reverse engineering.

However, even if chemical identity information can be legally withheld from the public, section 323 provides for disclosure of this information to health professionals who need the information for diagnostic and treatment purposes or local health officials who need the information for prevention and treatment activities. In non-emergency cases, the health professional receiving the information must sign a confidentiality agreement with the facility and provide a written statement of need. In medical emergency situations, the health professional must, if requested by the facility, provide these documents as soon as circumstances permit.

Information claimed as a trade secret and substantiation for that claim must be submitted to EPA. More detailed information on the procedure for submitting trade secrecy claims can be found in the trade secrets final rule, published in the Federal Register, July 29, 1988 (40 CFR 350). Any person may challenge trade secret claims by petitioning EPA. The Agency must then review the claim and rule on its validity.

The trade secret regulations cover the process for submission of claims, petitions for disclosure, and the review process for petitions.

SARA TITLE III PENALTIES.

Section 325 of the Emergency Planning and Community Right-to-Know Act addresses the penalties for failure to comply with the requirements of this law. Civil and administrative penalties ranging up to $10,000-$75,000 per violation or per day per violation can be assessed to facilities that fail to comply with the emergency planning (section 302), emergency notification (section 304), Community Right-to-Know (sections 311 and 312), toxic chemical release (section 313), and trade secret (sections 322 and 323) reporting requirements.

Criminal penalties up to $50,000 or five years in prison may also be given to any person who knowingly and willfully fails to provide emergency release notification. Penalties of not more than $20,000 and/or up to one year in prison may be given to any person who knowingly and willfully discloses any information entitled to protection as a trade secret. In addition, section 326 allows citizens to initiate civil actions against EPA, state emergency response commissions, and/or the owner or operator of a facility for failure to meet the requirements of the emergency planning and Community Right-to-Know provisions. A state emergency response commission, local emergency planning committee, state or local government may institute actions against facility owner/operators for failure to
comply with Title III requirements. In addition, states may sue EPA for failure to provide trade secret information.

TRAINING GRANTS.

Section 305(a) of the Emergency Planning and Community Right-to-Know Act authorized the Federal Emergency Management Agency to provide $5 million for each fiscal years 1987, 1988, 1989, and 1990 for training grants to support state and local governments. These training grants continue to be funded past 1990. These training grants are designed to improve emergency planning, preparedness, mitigation, response, and recovery capabilities. Such programs must provide special emphasis to hazardous chemical emergencies. The training grants may not exceed 80 percent of the cost of any such programs. The remaining 20 percent must come from non-federal sources. These training grants are coordinated within each state by the state emergency response commission.

PUBLIC ACCESS.

Section 324 of the Emergency Planning and Community Right-to-Know Act provides for public access to information gathered under the law. Under this section, all material safety data sheets, hazardous chemical inventory forms, toxic chemical release inventory forms, toxic chemical release form follow-up emergency notices, and the emergency response plan must be made available during normal working hours by the SERC and LEPC. In order to inform the public of the availability and location of the information provided to the LEPC, the LEPC must publish a notice annually in the local newspaper.

In addition, Toxic Release Inventory (Section 313) information collected by EPA is available by telecommunications and other means. This information can be accessed through a variety of sources. Each year, EPA releases a printed report summarizing the information that was submitted for the annual toxic release inventory. A computerized on-line database of the Toxic Release Inventory data is available through the National Library of Medicine’s TOXNET on-line system 24 hours a day. The complete Toxic Release Inventory on magnetic tape is available from the National Technical Information Service (NTIS) and the Government Printing Office (GPO). The 1987 TRI pertinent Hazardous Substance Fact Sheets containing reference material on the health and ecological effects of the regulated substances is available on CD-ROM from both NTIS and GPO. Also available through NTIS and GPO are floppy diskettes containing state specific Toxic Release Inventory information. Interested parties may view the 1987 Toxic Release Inventory data on microfiche at selected Federal Depository and public libraries. The list of libraries is also available from NTIS and GPO. Both state and national sets of microfiche can also be purchased from NTIS and GPO. Most of these products are updated on an annual basis; therefore be sure to indicate which year’s TRI data you would like.
RELATED LEGISLATION.

The Oil Pollution Act (OPA) of 1990 includes national planning and preparedness provisions for oil spills that are similar to SARA Title III provisions for extremely hazardous substances. Plans are to be developed at the local, State and federal levels. The OPA offers an opportunity for LEPCs to coordinate their Title III plans with area and facility oil spill plans covering the same geographical area.

The Hazardous Materials Transportation Uniform Safety Act (HMTUSA) includes funding grants to States for planning and hazmat training, as well as requiring the development of a national curriculum for training for responders. States must certify that they are complying with SARA Title III sections 301 and 303, and must pass through at least 75% of their planning grant directly to LEPCs; training grants to States and Indian tribes are to be used for training public sector employees in hazmat response and 75% of the training grant money must go to benefit the local responders.

The Clean Air Act Amendments require the EPA and the Occupational Safety and Health Administration (OSHA) to develop regulations for chemical safety management. Facilities that have certain chemical above specified threshold quantities will be required to develop a system to identify and evaluate hazards and manage those hazards safely. Information facilities develop on their hazards must be submitted to States and local emergency planners and available to the public.

The Pollution Prevention Act represents a fundamental shift in the traditional approach to pollution control. Instead of concentrating on the treatment and disposal of wastes, it focuses on source reduction. Specific provisions affect section 313 reporting and are described above.

FOR MORE INFORMATION...

Contact the Emergency Planning and Community Right-to-Know Information Hotline at (800) 424-9346, or (703) 412-9810, or TDD (800) 535-7672. Monday through Friday, 9:00 am to 6:00 pm, Eastern Time
Appendix E

EPA Regional Offices
EPA Regional Offices

EPA Region I
1 Congress Street
Boston, MA  02114-2023
(888) 372-7341

EPA Region II
290 Broadway
New York, NY  10007
(212) 637-3000

EPA Region III
1650 Arch Street
Philadelphia, PA  19103-2029
(800) 438-2474

EPA Region IV
Atlanta Federal Center
61 Forsyth Street, S.W.
Atlanta, GA  30303-3104
(800) 241-1754

EPA Region V
77 W. Jackson Blvd.
Chicago, IL  60604
(800) 621-8431

EPA Region VI
1445 Ross Avenue
Suite 1200
Dallas, TX  75202
(214) 665-2200

EPA Region VII
901 N. 5th Street
Kansas City, KS  66101
(800) 223-0425

EPA Region VIII
999 18th Street, Suite 500
Denver, CO  80202-2466
(800) 227-8917

EPA Region IX
75 Hawthorne Street
San Francisco, CA  94105
(415) 744-1500

EPA Region X
1200 6th Avenue
Seattle, WA  98101
(206) 553-1200