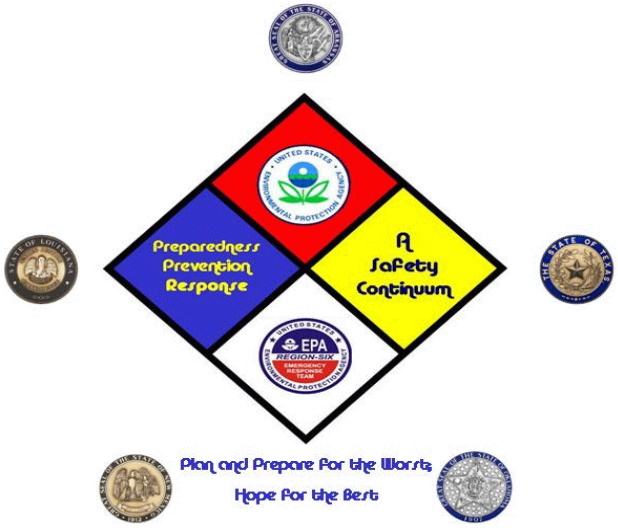


# REGION 6 Preparedness, Response, and Prevention Update

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## Compilation of Pertinent Articles from 1988 - 2004 – Volume 3

EPA Region 6 LEPC Website: . . . . . www.epa.gov/region6/lepc

## Notification to the State or EPA Regional Office

As most of you know, there are three base federal requirements for notification when a release or spill occurs. CERCLA 103 requires a report to the National Response Center when a hazardous substance is released above the reportable quantity.

EPCRA 304 requires a report to the State and LEPC when a release of a hazardous substance or extremely hazardous substance above the reportable quantity occurs; and the Oil Pollution Act requires reporting to the National Response Center when a spill of oil potentially reaches navigable waters of the United States.

However, many of our more significant incidents that have occurred in Region 6 over the years did not involve a release of a substance over the reportable quantity.

BPS Chemical, West Helena; Chief Chemical, Haskell; Shell Chemical, Deer Park; and Phillips Petroleum, Pasadena are all examples where state and federal assistance was needed, but yet a reportable incident under CERCLA 103 or EPCRA 304 did not occur. Multiple tire fires throughout the Region over the years also fit this profile.

Therefore, we are asking each LEPC to be mindful even though a major incident may occur in your area where State or local assistance will be needed, it does not necessarily guarantee that the responsible party will be notifying the State or NRC.

Each LEPC should have the 24-hour numbers for their State and Federal counterparts readily available, if help is needed. We have listed below suggested criteria where our States and EPA Region 6 would definitely want to receive a notification from local officials as soon as possible so that we can determine the need for a State or Federal response.

- Explosion or fire at refinery or chemical plant
- Death or multiple injuries of emergency responders as a result of chemical release
- Death or multiple injuries of workers as a result of chemical release
- Evacuation of community (offsite residents or other facilities)
- National or other major media attention
- Train derailment with actual or imminent release of hazardous materials
- 200 or more barrels spill of oil or oil product into navigable water

## Do's and Don'ts of Emergency Response

Don Fawn, TNRCC

The primary resource available to local government to defend against large-scale hazardous substance emergencies are well trained and well motivated first responders. Local government has the responsibility for planning and developing an emergency management system that is capable of effective and timely response.

Although other levels of government (county, state, and federal) may be called in to help when local resources have been exhausted, only local government can fulfill this critical initial response role.

Aside from natural disasters, most large scale hazardous substance emergency incidents will be in one or more of the following five categories - Biological, Nuclear, Incendiary, Chemical, or Explosive. These categories are often referred to by the acronym B-NICE.

Depending upon the nature of the material released, the source of the release, the geographical area, and meteorological conditions a response effort can be a very complex process and rarely stops with the simple removal of the contaminant.

Quite often, the debris from a cleanup is determined to be a hazardous waste that requires special handling and disposal. The proper disposal of hazardous wastes protects human health and the environment. Most state laws now specify that such wastes should be reclaimed or recycled wherever possible.

### The Goal

The goal of every emergency response effort is be to "favorably change the outcome".

The first properly trained responder arrives on scene with two inviolable "rules of thumb":

- If you don't know, don't go
- What you don't know can kill you.

No matter what the emergency may be, the first responder on-scene has the critical responsibility to "size-up" the incident and to communicate that assessment to fellow responders en route to the scene.

With personal safety first and foremost, this responder is expected to attempt "recognition and identification" of the problem, determine the need for "notification" of additional authorities or responders, determine "isolation" requirements, and determine

"levels of protection" for incoming responders.

**If one person does not assume command, the incident does: Someone must assume command.**

By default, the Incident Commander ("IC") at any given scene is the highest ranking initial responder or the person among the initial responders with the most applicable expertise for the incident.

When an incident escalates, it may be necessary to transfer command of the incident to a most experienced responder. In some cases, there may be a "pre-designated Incident Commander" specified in the affected jurisdiction's emergency response contingency plan, by local ordinance, or by a state statute.

Regardless of where it goes, any transfer of command must be "face-to-face" where possible and must include a "situation report" or SITREP to the person assuming command. Acceptance of the "IC" position includes personal assumption of responsibility (as well as legal liability in certain situations) for success or failure of the incident response operations.

**"Leave your ego at the front door, please"**

The Command Post is never the place for personalities, politics, or press. The IC must remain focused on the incident.

Simply stated, the most effective Incident Commander is pro-active, decisive, objective, calm, adaptable, flexible, and quick thinking. A good IC is also realistic about his or her limitations and is not hesitant to transfer command in response to changing incident conditions and priorities.

A large scale, multi-jurisdictional incident will quickly separate "those who can" from "those who think they can".

**Accept and understand the basic priorities**

Not every incident commander will have danced a ballet with a fully-charged fire hose, performed CPR on "master" under the watchful eye of "Buffy" the Great Dane, or worked in a fully-encapsulated hazmat suit on an August afternoon in west Texas.

While an IC may not understand the peculiarities of each and every job, the "priorities" are simple and universal. Proper incident management requires a thorough understanding and acceptance of the priorities of the local jurisdiction first responders.

Local firefighters, emergency medical personnel, rescue teams, and hazardous materials teams all share a common hierarchy of realistic priorities as follows:

- Protect themselves (and their "buddy") first. Use of the "buddy system" is mandated by law (29 CFR 1910.120).

- Rescue the survivors (conduct body recovery later). Set up triage and provide survivors with emergency medical attention within the "golden hour".

- Protect any immediate "exposures" - prevent things which aren't burning from catching fire (cooling adjacent appurtenances or structures subject to flame impingement), protect uncontaminated areas from becoming contaminated (placement of berms, dikes, and runoff/run-on controls), issue "evacuation" or "shelter-in-place" orders for potentially-affected population areas, etc.

- Containment and control of the problem - begin to attack the actual fire or to control the further spread of the contaminant.

- Extinguishment/Mitigation - put out the fire, eliminate the source of the contaminant, neutralize the contaminant, and stabilize the situation.

- Salvage and overhaul - ensure that the fire is out "cold", assess damages, properly manage and dispose of wastes. Conduct body recovery operations following completion of any required investigative, evidentiary, or forensic work by the appropriate authorities.

**THE DO'S**

**The Incident Commander Must Continue the "Size-up" Process Until the Response is Complete**

Size-up must continue until the response is complete. As a response operation mobilizes and throughout any subsequent expansion of operations, additional observations and information will be directed to the command post. The "IC" must continuously address the following questions:

- What is the nature of the incident (i.e., is this an "accidental release of a chemical" or an "act of terrorism")?

- What hazards are immediately obvious (and based on this assessment what unseen hazards could be anticipated)?

- How large is the affected area?

- How can the affected area best be isolated (i.e., "hazard tape" or "cyclone fence")?

- What other locations are available for the Command Post and equipment staging areas if the site conditions change (i.e., wind shifts, precipitation)?

- Where are the safest and most efficient locations to route rescue personnel and rescue equipment if needed?

An ongoing size-up allows the Incident Commander to accurately identify potential problem areas, to define resource needs, and to determine how to best manage and deploy resources.

**Use the Incident Command System (ICS)**

The U.S. Occupational Safety and Health Administration requires the use of the Incident Command System (ICS) by all agencies and personnel responding to hazardous substance emergencies (29 CFR 1910.120(q)).

The Incident Command System (ICS) is a management system that organizes functions, tasks, and response personnel.

It provides a function-oriented approach to an emergency. The ICS structure defines the responder's purpose, duties, and line-of-communications. The "functional" structure of ICS provides for the rapid "modular" expansion of the response team to handle an escalating incident.

ICS has long been used by the military. It is now used by federal agencies with emergency functions, adopted by most state governments, required by the fire service, required by the emergency medical service, and still largely ignored by the law enforcement community.

The widespread acceptance and use of ICS is due to its modular organization, use of common terminology, unified command structure, span-of-control, and resource management.

It has long been recognized that there is a limit to the number of personnel or tasks that can be adequately supervised by any single individual. Known as "Span-of-Control", this limit generally ranges from three to seven personnel or tasks. The ICS organization is comprised of five functional sections: Command, Operations, Planning, Logistics and Finance.

The Command Section assesses priorities, determines strategic goals/tactical objectives, develops an incident action plan, develops an organizational structure, manages resources, ensures responder safety, coordinates with outside agencies, and authorizes the release of information to the media.

The Command Staff includes the Public Information Officer, Safety Officer, and Liaison Officer.

The Public Information Officer is the single contact for the news media. The Safety Officer is responsible for scene safety and is the only individual with "veto power" over the decisions of the Incident Commander.

The Liaison Officer is the designated contact for other governmental agency representatives, elected officials, campaigning politicians, and special interest groups.

The Operations Section is responsible for developing operational plans, requests or releases resources through the IC, keeps the IC informed of the status of operations, and conducts tactical response actions.

The Planning Section is comprised of various technical experts (often referred to as Scientific Support Coordinators) whose input will provide the technical basis for an action plan.

These experts in various disciplines (i.e., toxicology, meteorology, chemistry, geology, hydrology, biology, botany, mycology, etc.) collect and evaluate information from a variety of sources to be used in the preparation of the incident action plan.

They also monitor changing weather conditions, assemble information on alternate strategies, identify the need for specialized resources (i.e., shallow-water oil skimmers, dispersants, microbial firefighting foam, other chemical agents, etc.), and provide periodic predictions on incident potential.

The Logistics Section procures all necessary equipment to support both the response effort as well as the needs of the responders. Logistics staff find and procure, sometimes rather creatively, any resources identified by Planning staff, traffic planning, food, sanitary facilities, and prepare the Incident Communications Plan.

The Financial Section documents costs, manages finances and, as in the case of a declared disaster, prepares the paperwork necessary for reimbursement by the federal government.

**Establish One Command Post and a "Unified Command Structure"**

Large-scale emergencies do not respect jurisdictional boundaries. The Incident Command System supports a multi-agency, unified command structure in which agencies with jurisdictional responsibility jointly determine response strategy and objectives; planning and tactical activities; and, sharing of resources.

No matter how many different entities may be represented on the Command Staff, one person is designated to be the Incident Commander. (29 CFR 1910.120(q)).

The Incident Commander should establish a single Command Post from which the response can be directed.

It is the responsibility of the Incident Commander to set up a unified command, maintain a span of control, clearly define the chain of command, be adaptable to a variety of situations, and to be familiar to each participant. A representative from each involved jurisdictional organization should be at the Command Post.

If the emergency involves a "responsible party", such as a petrochemical facility, hazardous materials transporter, or manufacturer, that party's representative should be at the Command Post as well.

The Incident Commander should solicit this input since the responsible party has the legal obligation to conduct and fund the cleanup of any contaminants and to address any damages to natural resources by way of compensation or restoration.

The financial liability for the response effort belongs to the responsible party. It is very important to the continuity of a response for the Incident Commander to know the availability and the limitations of the responsible party's resources in order to formulate a request for government funding.

**Establish the "Joint Information Center"**

The properly managed large-scale incident has one person designated as the Public Information Officer (PIO). In the unified command structure where several different agencies are represented on the Command staff, each agency representative will likely be accompanied by that particular agency's PIO.

However, the PIO designated by the Incident Commander will be the only person permitted to talk with the news media.

The incident PIO will coordinate the preparation of press releases and statements with the information officers from the other involved agencies, coordinate any public briefings by the Incident Commander, and work with other information officers to respond to public inquiries related to the incident.

A "Joint Information Center" should be established at a location well away from the incident and away from the Command Post. All public inquiries and requests from news media are directed to the information center.

A large-scale incident often requires the temporary setup of one or more "1-800 toll-free hotline" numbers. For example, one number may be assigned to handle survivor/ fatality questions, another for property damage/insurance questions, and another for questions related to human health, exposure, and medical monitoring questions.

**Make a Politician Feel Special**

Unfortunately, the media coverage generated by a large-scale incident presents a golden opportunity for elected officials to be seen on television by their constituents.

The Liaison Officer should be available to the designated information officer or information center staff in an "on call" capacity to setup and conduct special "VIP briefings" exclusively for elected public officials.

Continuity of a response effort, especially if the incident involves mass casualties, severe property damage, wildlife mortality involving any of the "Disney species", or impacts the local infrastructure (disruption of basic services and utilities), depends upon the support of public officials.

**Develop and Implement "the Plan"**

A written "Plan" is a necessity whenever an incident utilizes resources from other agencies, jurisdictions, or political subdivisions; utilizes private contractors and public money; or reassigns personnel, equipment, or normal job functions.

This "emergency response plan", "contingency plan", or "action plan" should be written to address the incident specific details of the Command, Operations, Planning, Logistics and Finance elements of the Incident Command System.

In a unified command structure, all involved jurisdictional representatives including the responsible party (if applicable) must jointly prepare the plan.

**Establish Written Standard Operating Procedures**

In additional to outlining the assignment, deployment, and management of personnel and equipment, the "Plan" should describe Standard Operating Procedures relative to these required components:

- Site Safety Plan identifying key personnel and alternates, incident specific hazards, risk analysis, air monitoring procedures, sampling techniques, personal protective equipment (PPE), decontamination procedures, and proper management/disposal of decontamination wastes.

- Medical Plan describing medical monitoring, emergency medical procedures, transportation, methods, medical facilities etc.

- Radio Communications Plan specifying radio frequency assignments, call signs or unit numbers, radio "codes", "common terminology" to be used for all radio communications. This plan should specify a set of "visual" or "hand" signals to be used in the event that radio communications fail.

**Define Tactical Considerations**

Tactical considerations can be described as either "Defensive" or "Offensive".

Defensive operations are oriented towards confinement of the problem, but not the stabilization of the incident. In the case of a large chemical spill, a defensive approach would attempt to prevent the spread of the chemical over a larger area.

Offensive operations are oriented towards containment of the problem and stabilization of the incident. In the case of a large chemical spill, an offensive approach would attempt to stop or control the source of the release.

**Reevaluate**

As previously emphasized, an incident "size-up" is never completed until the situation is mitigated and completely under control. Because emergency incidents rarely behave according to any written plan, the "Plan" must flexible enough to provide for the ongoing "reevaluation" of tactical operations.

When the "outcome does not favorably change", the incident requires another: (a) size-up of incident factors; (b) analysis of the most recent data; (c) a change in action or strategy; (d) a change in goals or objectives; and (e) the implementation of different tactical operations to achieve the new objectives.

**Employ a "Phased" Approach**

Define when the incident is no longer an emergency. At what measurable point does the response cease to become "crisis management" and become one of "mitigation" or long-term remedial action?

The Plan should specify measurable benchmarks for the various "phases" of the response effort.

A procedure for a smooth transition of command should be specified as well. For example, the local Fire Chief may be the best Incident Commander to manage a response to a large chemical facility fire.

Upon extinguishing the fire; however, the incident ceases to be an "emergency" requiring the services of local first responders. The public has been protected from acute exposure hazards but a chronic exposure problem may persist.

The nature of the threat is the presence of uncontrolled hazardous wastes, hazardous byproducts of combustion, runoff to water, contamination of water, air quality problems, uncontrolled public access; none of which can be properly managed with a fire truck.

An emergency condition still exists but the response requires an Incident Commander with the background to consult with experts on response options such as use of chemical agents, bioremediation, innovative treatment technologies, alternate treatment methods, spill waste management, as well as surface and groundwater monitoring and protection.

A well-written "Plan" contains ample flexibility for the application of Common Sense in response to rapidly changing conditions. The Plan must be written in a simple everyday language easily understood by emergency responders, financial auditors, and attorneys. A brief ultra-simplified "VIP" version should be prepared for any campaigning politicians.

**Know when to "Delegate"**

A large-scale emergency response effort is at the mercy of many constantly changing variables. Something as subtle as a shift in wind direction may change task requirements, alter site safety considerations, or require the relocation of resources. The dynamic nature of an emergency incident will most often influence span-of-control considerations.

A competent Incident Commander must recognize when he is approaching his personal "span-of-control" limit and delegate some of his tasks. Resources not specifically delegated by the IC remain the responsibility of the IC.

Additionally, response managers at all levels of the ICS should be trained to recognize when their "supervisory" capabilities are about to be exceeded and to request additional resources as soon as possible.

**Understand the applicable regulations: Familiarity with the following regulations is a necessity:**

- 29 CFR 1910.120 Hazardous Waste Operations and Emergency Response
- 29 CFR 1910.132 Personal Protective Equipment

- 29 CFR 1910.134 Respiratory Protection
- 32 CFR 659.201 Department of Army (DA) Oil and Hazardous Substances Spill Control and Contingency Plans
- 40 CFR 110,2,6 Discharge of Oil, Pollution Prevention, and Designation of Hazardous Substance
- 40 CFR 261 Identification and Listing of Hazardous Waste
- 40 CFR 262 Standards Applicable to Generators of Hazardous Waste
- 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste
- 40 CFR 300 National Oil and Hazardous Substances Pollution Contingency Plan
- 40 CFR 355 Emergency Planning and Notification
- 40 CFR 370 Hazardous Chemical Reporting: Community Right-to-Know
- 49 CFR 171 Hazardous Materials Regulation: General Information, Regulations, and Definitions
- 49 CFR 172 Hazardous Materials Tables and Hazardous Materials Communications Regulations
- 49 CFR 173 Shipper General Requirements for Shipping and Packaging

**Consult reference sources**

- Emergency Response Guidebook developed by the U.S. Department of Transportation.

- CHRIS: Chemical Hazard Response Information System developed by the U.S. Coast Guard. Access through the National Response Center at (800) 424-8802.

- Condensed Chemical Dictionary, Gessner G. Hawley, Van Norstrand Reinhold Co., 135 W. 50th Street, New York, NY.

- NIOSH Pocket Guide to Chemical Hazards, U.S. Government Printing Office, Washington, DC 20402.

- Dangerous Properties of Industrial Materials, edited by N. Irving Sax, Van Norstrand Reinhold Reinhold Co., 135 W. 50th Street, New York, NY 10020.

- Documentation of Threshold Limit Values (TLV), ACGIH Publications Office, 6500 Glenway Ave., Bldg. D-5, Cincinnati, OH 45211.

- OHMTADS: Oil and Hazardous Materials Technical Assistance Data System, developed by the U.S. Environmental Protection Agency and may be accessed through U.S. EPA Regional Offices.

- Farm Chemicals Handbook, edited by Charlotte Sine and published annually by Meister Publishing Company, Willoughby, Ohio.

- Maintain a list of response assistance numbers

| | |
|---|---|
| • National Response Center | (800) 424-8802 |
| • Chemical, Biological Defense Command Ops Center | (800) 368-6498 |
| • USCG National Strike Force | (800) 424-8801 |
| • Environmental Response Team: | contact EPA Regional Office |
| • Department of Transportation Hotline | (202) 426-2075 |
| • Bureau of Explosives | (202) 835-9500 |
| • Chemical Referral Center | (800) 262-8200 |
| • CHEMTREC | (202) 483-7616 |
| • CHLOREP (Chlorine Emergency Plan) | Access through CHEMTREC |

**Consider the possibility of "terrorism"**

Continuously size-up the incident and consider all the possibilities including the previously unimaginable. Is the incident just an accident or human error involving one of the B-NICE substances or is it a "terrorist incident"? Common clues and motivational factors include:

- Religious: Is the incident at a church, synagogue, or other place of worship? Is the site the target of protest by religious group, i.e., a women's health care center, a "planned parenthood" facility, an establishment with a predominately homosexual clientele?

- Ethnic or Racial: Is the scene associated with an ethnic or racial group, i.e., a church with a predominately black congregation, etc.?

- Single Issue: Has the site been the focus of single issues groups, i.e. animal rights activists, certain environmental activist groups, etc.

- Political: Is the site occupied by government employees, i.e., local, city, county, state, or federal? Is the site significant to secessionist, separatists, or nationalist groups?

- Criminal: Is the site related to gang activity or rival criminal factions, i.e., narco-terrorists?

- Economic: Has the business at the site recently laid off employees or has it been the subject of protests, strikes, or shutdowns by management, workers, or labor-specific interest groups?

- Date/Time: Is the day or time of the incident significant, i.e. April 19 - the Oklahoma

City Bombing, the holocaust in Waco, Texas?

The FBI defines terrorism as "the unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives."

The victims may be totally unrelated to the terrorists' cause. Terrorism is violence aimed at the people watching. Fear is the intended effect, not the byproduct, of terrorism.

For example, a large scale B-NICE emergency becomes something completely different when an individual or group claims responsibility for the act based on a political cause, religious ideology, of other belief system.

That "expression of intent" redefines the incident as an "act of terrorism" and the emergency now involves the use of a "weapon of mass destruction".

While the technical aspects of a response to an accidental chemical release will probably be no different than the response to the same chemical intentionally released in behalf of a particular deity, political system, or social issue.

The important difference is one of "intent". If terrorism is the potential cause of an emergency incident, the Incident Commander immediately undertake the following actions in the order listed below:

- Responders should pullback and assume defensive tactics. "Mass destruction" is the goal of the incident and it is not at all uncommon for a secondary device to have been placed specifically to target emergency responders thereby further disrupting the "government infrastructure" at the local, regional, or state level.

  Unfortunately, the massive media attention generated by such emergency events is often viewed by terrorist groups as an excellent opportunity in which to execute another terrorist act designed to produce fear.

- If the incident is one of a series of "terrorist threats", never set up the command post or staging areas in the same place twice!

  Terrorists often "probe the system" with a series of threats of "hoax calls" and observe the response mobilization looking for a common denominator. This is a common method of determining the best placement for primary or secondary device.

- Immediately contact the U.S. Federal Bureau of Investigation (FBI) through the National Response Center at (800) 424-8802. .

Pursuant to federal law, the incident is a federal crime and the Federal Bureau of Investigation assumes incident command. (18 USC 2332b (g)(5), Acts of Terrorism Transcending National Boundaries; 18 USC 3077, Rewards for Information Concerning Terrorist Acts and Espionage; 18 USC 2331(1), Definition of "International Terrorism;" and 18 USC 921(a)(22), Firearms).

- Remember that the scene of a terrorist incident is a "crime scene" as well as the scene of an emergency response. All practical precautions should be undertaken to minimize the disturbance or destruction of evidence while addressing the human health and safety priorities.

Presidential Decision Directive 39 (PDD-39) United States Policy on Counterterrorism defines policies concerning the federal response to threats of acts of terrorism involving nuclear, biological, chemical, and/or weapons of mass destruction (NBC/WMD).

The specific responsibilities of various federal agencies are outlined in PDD-39. Copies may be obtained by contacting the Federal Emergency Management Agency (FEMA) Printing and Publications at (202) 646-3484.

**THE DON'TS**

Charles Darwin's Theory of Natural Selection when combined with a proper implementation of the Incident Command System precludes the need for a long list of practices to avoid. In fact, there are only two.

**Don't Vacillate**

The worst decision an Incident Commander can make is to not decide. Decide something, even if it is to turn around and run. It is completely defensible to decide on the side of safety and opt for a defensive tactical approach based on the two "inviolable rules of thumb". The IC is responsible for life safety first and "Seconds Save Lives".

**Don't forget the DUCT TAPE**

There is never enough duct tape to go around.

Fawn, Donald, R.
The Standard Handbook of Environmental Science, health, and Technology, Chapter 16, The Do's and Dont's of Emergency Response.
McGraw-Hill Publishing Co., July 2000.

## Chemical Accident Prevention: Site Security

### PROBLEM

Facilities that handle chemicals are actively engaged in managing risks to ensure the safety of their workers and the community. Most of their efforts focus on ensuring that the facility is designed and operated safely on a day-to-day basis, using well-designed equipment, preventive maintenance, up-to-date operating procedures, and well-trained staff.

Because of today's increased concern about terrorism and sabotage, companies are also paying attention to the security of facility sites, chemical areas, and processes.

All companies, big and small, should have some measure of site security in place to minimize crime and to protect company assets. This is especially true for facilities that handle extremely hazardous substances.

### EXAMPLES

The following examples illustrate the range of damage that can occur at facilities handling hazardous substances because of criminal activity:

- A manufacturer uses flammable naphthalene to produce mothballs. Received in molten form, the naphthalene solidifies when cooled and looks similar to candle wax. Trespassing teenagers found the vats of naphthalene that were left to cool.

  They ignited the naphthalene and started a fire. Approximately 40 acres of industrial property burned, at an estimated cost of $100 million.

- Every few weeks, EPA receives reports that thieves, looking for ammonia to use to make illegal drugs, have broken into fertilizer dealers, refrigerated warehouses, or ice manufacturing facilities, frequently leaving valves open.

  In some cases, the thieves have been overcome by the ammonia and needed to be rescued; in other cases, the community has been evacuated, and there have been injuries to the general public and to responders from exposures to the ammonia.

- There are cases where vandals have attempted unsuccessfully to break into chlorine tank cars. Fortunately, the design of the chlorine tank car includes a heavy steel dome and additional lock out devices that discourage even well-equipped vandals.

These examples illustrate the need to examine security measures at a facility, especially those handling highly hazardous substances, to guard against criminal acts, including vandalism.

## AREAS OF CONCERN

Threats may come in different forms and from different sources. Threats from outside the facility could affect people and facility itself, and may involve trespassing, unauthorized entry, theft, burglary, vandalism, bomb threats, or terrorism.

Threats from inside the facility may arise from inadequate designs, management systems, staffing or training, or other internal problems.

These may include theft, substance abuse, sabotage, disgruntled employee or contractor actions, and workplace violence, among others. Threats are not restricted to people and property, but could also involve sensitive information.

Both facility outsiders and employees or contractors could pose threats to data storage and transmission of, for example, confidential and contract information, and privacy data.

They could also pose a threat to computer- controlled equipment. These threats may include breaches in data access and storage, uncontrolled dissemination or destruction of information, or threats to automated information systems.

## COMMON SECURITY MEASURES

Most security measures are intended to prevent intruders from gaining access to the site or to limit damage. The following sections present a number of design and procedural approaches that facilities have successfully implemented.

The appropriateness of any one of these depends on site-specific conditions that you would need to consider in assessing any security needs for your facility.

### Preventing Intrusion

Most facilities have some measures that are intended to prevent intruders from entering the grounds or buildings. These measures may include fences, walls, locked doors, or alarm systems.

The location of the facilities and the types of structures will determine how much and what type of protection a facility needs. In addition to basic measures, some facilities also provide protection of site utilities at the perimeter.

Security lighting (good lighting around buildings, tanks, and storage) can also make it very difficult for someone to enter the facility undetected.

Some facilities augment these measures with intrusion detection systems, video surveillance, guard posts, rounds/ mobile patrols, alarm stations, and detectors for explosives. If you have guards, it may be useful to consider their training in detection and response and the availability to them of equipment for appropriate protective force.

To protect against unauthorized people coming in through normal entrances, security clearances, badges, procedures for daily activities and abnormal conditions, as well as vehicular and pedestrian control, can provide efficient access for employees while ensuring that visitors are cleared before entering.

Most facilities have procedures to recover keys from employees who leave and to immediately remove the employee's security codes from systems.

At times it may be wise to consider additional measures, such as changing locks, when a disgruntled employee leaves.

**Limiting Damage**

In addition to protecting a facility from intruders, it is important to limit the damage that an intruder (whether physically at the site or "hacking" into the company's computers) or employee could do.

Most of the steps to limit damage are probably things you already do as part of good process safety management, because they also limit the loss of chemicals if management systems or equipment fails or an operator makes a mistake.

These steps can be related to either design and processes or to procedures implemented.

**Facility Design**

A well-designed facility, by its layout, limits the possibility that equipment will be damaged and, by its process design, limits the quantity of chemical that could be released. Facility and process design (including chemicals used) determine the need for safety equipment, site security, buffer zones, and mitigation planning.

Eliminating or attenuating to the extent practicable any hazardous characteristic during facility or process design is generally preferable to simply adding on safety equipment or security measures.

The option of locating processes with hazardous chemicals in the center of a facility can thwart intruders and vandals who remain outside the facility fenceline. Transportation vehicles, which are usually placarded to identify the contents, may be particularly vulnerable to attack if left near the fenceline or unprotected.

However, for some facilities and processes, the option of locating the entire process at the center of the site may not be feasible.

You may need to consider external versus internal threats, such as the threat to workers if an accidental release occurs, or the access to the process in case of an emergency response. Where feasible, providing layers of security will protect equipment from damage. These layers could include, for example, blast resistant buildings or structures.

Enclosing critical valves and pumps (behind fences or in buildings) can make it less likely that an intruder will be able to reach them, a vehicle will be able to collide with them, or that releases are compounded because of damage to neighboring equipment.

Chlorine tanker valves are an example of equipment design with several layers of security:

(1) a heavy steel dome with lid;

(2) a heavy cable sealing system that requires cable cutters to remove;

(3) a heavy duty valve that can withstand abuse without leaking; and

(4) a seal plug in each valve.

As many as three different tools would be needed to breach the container's integrity.

If equipment is located where cars, trucks, forklifts, or construction equipment could collide with it or drop something on it, the equipment should be constructed from materials that could stand some abuse. In general, you should give consideration to collision protection to any equipment containing hazardous chemicals with, for example, collision barriers.

The idea of layers of security may also be applied to communications/ computer security. Some companies have developed alternate capabilities and systems to protect receipt and transmission of confidential information. Backup power systems and/or conditioning systems can be important, particularly if processes are computer controlled.

Access to computer systems used to control processes may need to be controlled so that unauthorized users cannot break in; appropriate computer authentication and

authorization mechanisms on all computer systems and remote access may prove useful; entrance into control rooms may need to be monitored and limited to authorized personnel.

For emergency communications, some companies use radios and cell phones as a backup to the regular system.

Well-designed equipment will usually limit the loss of materials if part of a process fails. Excess flow check valves, for example, will stop flow from an opened valve if the design flow rate is exceeded. These valves are commonly installed on chlorine tankcars and some anhydrous ammonia trailers, as well as on many chemical processes.

Like excess flow valves, fail-safe systems can ensure that if a release occurs, the valves in the system will close, shutting off the flow. Breakaway couplings, for example, shut off flow in transfer systems, such as loading hoses, to limit the amount released to the quantity in the hose.

If you store hazardous liquids, you may want to consider containment systems (e.g., buildings, dikes, and trenches) that can slow the rate at which the chemical evaporates and provide time to respond. Double-walled vessels can also protect against attempts to rupture a tank.

The installation of chemical monitors that automatically notify personnel of off-hour releases could be important if your facility is not staffed during certain periods (e.g., overnight).

Such monitors, however, are not available for all chemicals. The appropriateness of monitors, and any other equipment design solutions, will depend on site-specific conditions.

**Procedures and Policies**

Your facility's policies and procedures can also limit the damage caused by a release. As with design issues, the procedural steps you routinely take to operate safely also help protect your facility from attacks. Maintaining good labor relations may protect your facility from actions by either employees or contractors.

Open negotiations, workplace policies emphasizing that violence and substance abuse are not tolerated, and adequate training and resources to support these policies are important considerations.

The goal is to develop a workforce and management capacity to identify and solve problems by working together. Following are several examples of specific areas where procedures and policies can prevent or limit the damage of a release.

As a matter of good practice, as well as site security, you may consider disconnecting storage tanks and delivery vehicles from connecting piping, transfer hoses, or distribution systems when not in use. Leaving the tanks linked to the process or pipeline increases the chance of a release because the hoses or pipes are often more

vulnerable than the tanks.

In addition to monitoring your inventory, another practice you may adopt is limiting the inventory of materials to the minimum you need for your process. This policy limits the quantity of a hazardous material that could be released.

You could also consider actions such as substituting less hazardous substances when possible to make processes inherently safer.

Your written procedures are also an important tool in protecting your facility. As part of your regular operating procedures, you probably have emergency shutdown procedures. These procedures, and workers trained in their use, can limit the quantity released.

The procedures are particularly important if you have processes that operate under extreme conditions (high or low pressures, temperature) where rapid shutdown can create further hazards if done improperly.

As you review your contingency plan, consider, if necessary, revisions to address vandalism, bomb threats, burglary - including evaluating the desirability of your facility as a target - working with local law enforcement, and providing extra security drills and audits.

Many companies find that working with local law enforcement is an effective means of evaluating security risks.

As a matter of good practice, for both process and response equipment, it is important to have a program that ensures that all equipment is subject to inspection and to corrective and preventive maintenance. In this way, you can be sure that the safety systems you install will operate as designed.

**SITE-SPECIFIC DECISIONS**

The steps taken to operate safely will often serve to address security concerns as well. Considering safety in the design and operation of any facility will have the benefit of helping to prevent and/or minimize the consequences of any release.

Before taking steps to improve site security, you may want to evaluate your current system and determine its adequacy. Factors you might consider include:

- The chemicals stored at your site; some may be particularly attractive targets because of the potential for greater consequences if released.

- The location of the site; sites in densely populated areas may need more security than those at a distance from populations.

- The accessibility of the site; is the existing security (e.g., fences, security lighting, security patrols) adequate to limit access to the site?

- The age and type of buildings; older buildings may be vulnerable because of more windows; some building are designed for easy access.

- Hours of operation; a facility that operates 24-hours day may need less security than a facility that is unoccupied at night.

Decisions about improving site security should be made after evaluating how vulnerable your site is to threats and what additional measures, if any, are appropriate to reduce your vulnerability. Each facility should make its own decision based on its circumstances.

**Air Pollution Training Institute (APTI)**

Just like FEMA, EPA offers home study courses, specializing in air pollution courses. APTI self-instructional courses may be introductory or advanced courses. These courses are developed for individual self-paced learning in a format which is best suited for the material being presented. Formats may include written text and/or audiovisual materials.

http://www.epa.gov/oar/oaqps/eog/catalog/catsic.html

RE100 . . . . . Prerequisite Reading on Control Technology
SI100 . . . . . Mathematics Review for Air Pollution Control
SI300 . . . . . Introduction to Air Pollution Toxicolog
SI400 . . . . . Introduction to Risk Assessment/Risk Management
SI404 . . . . . Urban Air Toxics
SI409 . . . . . Basic Air Pollution Meteorology
SI410 . . . . . Introduction to Dispersion Modeling
SI422 . . . . . Air Pollution Control Orientation Course
SI428 . . . . . Introduction to Boiler Operation
SI431 . . . . . Air Pollution Control Systems for Selected Industries
SI443 . . . . . Chain-of-Custody Procedures for Samples and Data
SI445 . . . . . Introduction to Baseline Source Inspection Techniques
SI446 . . . . . Air Pollution Source Inspection
SI448 . . . . . Diagnosing Vegetation Injury Caused by Air Pollution
SI453 . . . . . Overview of PSD Regulations
SI458 . . . . . Hazardous Waste Calculations
SI460 . . . . . Introduction to Permitting
SI473 . . . . . Beginning Environmental Statistical Techniques
SI473B . . . . . Introduction to Environmental Statistics

**Lubrizol Corporation: New Chemicals Issues Assessment**
EPA 550-F01-005

The Chemical Safety Network is designed to share successful practices in implementation, risk communication, and data use. The projects detailed in the Chemical Safety Network are easily reproducible, low cost and promote partnership-building in the community.

This factsheet does not provide extensive information about a project. Rather, it is intended to help stakeholders generate ideas, identify tools and pinpoint funding sources for accident preparedness and prevention initiatives.

**Program Overview**

Lubrizol has developed and implemented a program called the New Chemicals Issues Assessment (NCIA). This assessment has helped bring a more consistent and formal review of the environmental, health, and safety (EHS) issues associated with new chemicals early in the development cycle.

**NCIA Features**

- Formal and easy risk analysis process
- Assessment of manufacturing operability issues in all phases of development
- Initial analysis is performed by the research chemist and development engineer
- Economic impact of EHS issues is incorporated in commercial decision-making
- Updated analysis is conducted with the manufacturing engineer at the “commit to commercialization” stage

The adoption of this system has led to more efficient, less complex and inherently safer products and processes. Instead of addressing EHS issues after new products and processes have been commercialized, it is more effective to do so early in the research and development phase.

**Safety, Health, and Environmental**

Lubrizol has successfully used this process to replace some raw materials with less hazardous materials, reduce volumes of waste streams, improve product quality and process control, and improve yields.

The NCIA process has also helped enhance the quality of information available for the decision to commercialize a product, including risk to employees, customers, the public and the environment.

**Implementation**

Implementing the process went more smoothly than anticipated because it was beneficial for everyone involved.

- Manufacturing personnel support NCIA because it helps ensure that material and process issues that would cause manufacturing difficulties are addressed during development.

- Process development engineers support NCIA because it helps them obtain a more complete understanding of the material and process issues at the beginning of project, leading to better processes in less time.

- Research chemists support NCIA because it gives their research a better chance of being commercialized.

- Research management and business groups support NCIA because it helps reduce the time and cost to develop processes for new chemicals.

**Tips for smaller businesses**

Using an effective and well-established process to address new chemical issues prevents errors by inexperienced personnel.

This can be especially beneficial in smaller organizations where there are few experienced personnel available to closely supervise newer employees.

Combining safety, health, environmental, and operability issues into a single assessment process reduces duplication of effort.

Decisions to cancel projects with obvious safety, health, regulatory, or processing problems may be made earlier, thereby redirecting resources to more attractive projects.

## FEMA's Independent Study Program

The Emergency Management Institute (EMI) Independent Study Program consists of self-paced courses designed for both the general public and people who have emergency management responsibilities.

Each Course includes lessons with practice exercises and a final examination. Those who score 75 % or better are issued a certificate of completion by EMI. There are numerous courses that can be downloaded off the internet.

http://www.fema.gov/EMI/Ishome.htm

IS-1 . . . . . Emergency Program Manager: An Orientation
IS-2 . . . . . Emergency Preparedness USA
IS-3 . . . . . Radiological Emergency Management
IS-5 . . . . . Hazardous Materials: A Citizen's Orientation
IS-7 . . . . . A Citizen's Guide to Disaster Assistance
IS-8 Building for the Earthquakes of Tomorrow: Complying with Executive Order 12699
IS-9 . . . . . Managing Floodplain Development Through the National Flood Insurance Program (NFIP)
IS-10 . . . . . Animals in Disaster – Awareness and Preparedness
IS-11 . . . . . Animals in Disaster – Community Planning
IS-120 . . . . . An Orientation to Community Disaster Exercises
IS-195 . . . . . Basic Incident Command System
IS-275The EOC's Role in Community Preparedness, Response, and Recovery Activities
IS-279 . . . . . Engineering Principles and Practices for Retrofitting Flood-Prone Residential Structures
IS-288 . . . . . Voluntary Agencies in Emergency Management
IS-301 . . . . . Radiological Emergency Response
IS-324 . . . . . Community Hurricane Preparedness
IS-346 . . . . . Hazardous Materials for Medical Personnel
IS-393 . . . . . Introduction to Mitigation
IS-394 . . . . . Mitigation for Homeowners
IS-513 . . . . . The Professional in Emergency Management
IS-600 . . . . . Considerations for FEMA Public Assistance Projects
SS-534 . . . . . Emergency Response to Terrorism

You can also get more information on these courses by writing:

National Emergency Training Center – EMI Independent Study Program
16825 South Seton Avenue
Emmitsburg, MD 21727

**Chemical Safety Network: How to Increase Public Awareness and Improve Emergency Notification: Beach Cities CAER (Community Awareness and Emergency Response)**

## Purpose

Beach Cities CAER is a nonprofit group comprised of local businesses, industries, emergency response organizations (first responders and police), utilities, educators, medical facilities, and the public.

Located in Southern California, the group is open to members located in the cities of El Segundo, Hawthorne, Manhattan Beach, Torrance, Gardena, Hermosa Beach and Redondo Beach.

There are eight chemical and petrochemical companies, three utility companies, nine emergency assistance organizations, five school districts and one major hospital involved in the organization.

Over the past decade, the City of Torrance has worked with chemical and petrochemical companies to develop and install warning sirens and other tools to be used throughout the community in case of a chemical emergency.

However, a greater public understanding of the warning system and appropriate response actions was needed.

The Community Warning System public awareness campaign was developed to teach Torrance residents how to identify a chemical release and how to respond should a chemical emergency occur.

## Partnerships

Two chemical companies and one petrochemical company, along with Beach Cities CAER, the City of Torrance and the Torrance Unified School District sponsored the Torrance Community Warning System public awareness campaign.

The warning system targets the entire city, which is the location of a number of smaller chemical companies that were not directly involved in sponsoring the outreach campaign.

## Budget

The budget was approximately $75,000, which was funded by the industrial companies involved with the campaign.

**Tips For Setting Up Your Campaign**

Beach Cities CAER suggests the following tips:

- Identify all tools, systems and procedures and pull together into one unified warning system;

- Conduct community discussion groups and distribute a survey to registered voters to determine their information needs and information access preferences;

- Develop outreach materials including: color guide (student version and adult version); stickers for home and car; teacher kits; press release and advertising campaign;

- Brief news reporters and kick off the campaign at a press conference at a local elementary school following a shelter-in-place drill;

- Send student-version warning system guides home to parents.

  Reward students with a “free French fries” coupon if they return a signed tear-off sheet in the guide indicating that they had reviewed the material with their parents (approximately 3,500 students returned sheets);

- Run large advertisements in local newspaper for six consecutive weeks to alert readers to check their mail for the guide;

- Mail adult-version guides to all residential and business addresses in your locality;

- Meet with the School District; City Council; homeowner associations; representatives of private schools, day-care facilities, senior-citizen centers, and senior citizen care and medical facilities;

- Establish a phone bank to handle calls during emergencies and to determine what additional training may be needed;

- Produce and air a program on city cable channel (repeat the program periodically); and

- Design and implement an annual refresher course.

**Challenges**

The group identified the following challenges:

- Large transient population (night time residential population is approximately 130,000, daytime population approximately 500,000);

- Diverse ethnic population , over 60 dialects are spoken, lending to language barriers in communication tools and the need for multiple communication techniques (mailings, newspaper articles, cable television, community meetings);

- Condensation of pertinent information into readable and friendly language and in an accessible format; and Need to identify additional audiences and to develop refresher communication to initial audiences.

**Increased Awareness**

In June 2000, the Community Warning Siren was used for the first time to warn the community of a chemical release.

Schools within the 1.2-mile radius of the warning siren sheltered in place and waited for the all-clear signal.

Many neighboring businesses sheltered in place.

While some of the calls that came into the phone bank during the emergency indicated the need for additional training; many residents indicated they had followed the appropriate procedure and had sheltered in place.

Callers then requested specific information regarding the incident as well as next steps.

## Chemical Safety Network: How to Develop a Health Alert Network: Baton Rouge, Louisiana, LEPC

### Purpose

The geographic location of the East Baton Rouge Parish makes it likely that natural disasters, such as floods, tornados, or hurricanes will occur.

The region also has been declared a "High Risk" area for enemy attack and participates in the federal domestic preparedness program.

The health alert network seeks to enhance the capabilities of local officials and emergency responders in incidents involving nuclear, biological and chemical terrorism.

The Baton Rouge Local Emergency Planning Committee has identified people and equipment resources that may be needed during or following a deliberate or natural biological event.

### Partnerships

The Director of Emergency Preparedness serves as the chairperson for the LEPC.

The LEPC formed a Health Care Subcommittee that is chaired by the coroner and includes a psychologist, a pharmacist, an epidemiologist, a nurse, an emergency medicine physician, and others.

The group is working to enhance their Metropolitan Medical Response System.

This project could serve as a pilot to develop a national health alert network to deal with public health issues surrounding deliberate and natural biological events.

The federal Center for Disease Control is interested in developing software aimed at helping State and local officials identify patterns of symptoms that could be identified quickly should an individual be exposed to biological contaminants.

### Resources

The East Baton Rouge Parish LEPC does not have an operating budget or generate funds through an industry fee program. Grants awarded through federal and state programs provide funding for projects, which are developed and implemented through the LEPC.

Partnerships serve as an additional source of funding for program implementation and development.

**Tips on Setting up a Medical Response System**

The East Baton Rouge LEPC offers the following tips:

- Work toward a cooperative community effort;
- Incorporate the resources and response from jurisdictions that serve in a mutual aid capacity;
- Take a unified approach to communications and training;
- Build relationships with your neighboring communities. Remember, response may often spread outside your jurisdictional boundaries;
- Involve the right people. Include individuals from the public health service; public and private hospitals; other health- are facilities; departments of emergency medicine, veterinary medicine, and the coroner's office; environmental agencies and citizen groups.
- Focus initially on the key components of coordination and response; available community resources; first-responder education; coordination of plans and operating procedures; and communications and coordination of information.

**Rosemary Henderson Remembered by Colleagues**
*From the EPA OSWER Training Forum*

Rosemary Henderson of Region 6, for years a great influence at EPA Region 6, died June 28, 2000, in Dallas, Texas. She was 78.

Rosemary's career with EPA spanned 25 years. Before joining the agency she was active in education, politics and charities, running for the school board, serving on the Dallas city planning commission, and involved with the Parent-Teacher Association, League of Women Voters, American Association of University Women, and the Dallas Historical Society.

She worked in political campaigns and helped found the Dallas County Community College District. During World War II, she was an economist for the War Production Board and the Boeing Corporation.

While at EPA, Rosemary was heavily involved with environmental justice issues, training, and outreach.

She worked in SARA and EPCRA, was a representative to the EEOC, helped instruct an OSHA 40-hour course, and served on a review board at the atomic energy facility in Arkansas.

It is a measure of her impact on the community she served while at EPA that Texas State Technical College in Waco recently honored her by dedicating the Rosemary G. Henderson Environmental Training Center.

Her colleagues on the training forum remember her as witty, awesomely knowledgeable, and exacting. She upheld high standards for herself and others.

"She looked like everybody's grandmother, but when called for she could be as tough as they come," said one colleague.

Added another, "An energetic and articulate spokesperson for the issues in Region 6, she was warm, caring and funny and enlivened every meeting with her stories and anecdotes. Nobody could laugh like Rosemary, and nobody but Rosemary could make you crack a smile and laugh in return. She will be missed."

Comments a Headquarters staffer: "When we are highly impressed by a person without even knowing her personally, it speaks volumes about that person. Rosemary raised the concept of 'training' to a higher level and each of us carries that legacy forward daily from having known and worked with her. I'll not forget."

## First Responders' Environmental Liability Due to Mass Decontamination Runoff

### Problem

On April 19, 1999, the Team Leader of the Chemical Weapons Improved Response Team (CWIRT), U.S. Army Soldier and Biological Chemical Command sent a letter to EPA raising issues concerning first responders' liability during a weapons of mass destruction (WMD) terrorist incident.

Specifically, the CWIRT asked about the first responders' liability for spreading contamination while attempting to save lives.

Environmental liability resulting from critical lifesaving actions may seem unlikely, but could be a serious concern for many first responders.

The question is: Can emergency responders undertake necessary emergency actions in order to save-lives in dire situations without fear of environmental liability even when such emergency actions have unavoidable adverse environmental impacts?

This concern is not limited to WMD terrorist incidents, it has broad implications for our National Response System (NRS) and frequently is discussed in the hazardous materials response community.

### The Nerve Agent Drill

The federal government recently sponsored a multi-agency drill based on a simulated nerve-agent attack.

The release of the nerve agent resulted in hundreds of simulated casualties who survived the initial terrorist attack. The hazmat team had to rescue and decontaminate these "survivors" before they could receive medical attention.

The hazmat team identified the need to collect the water used to decontaminate the victims (deconwater) to avoid a release to the environment.

During the drill, these very capable, well-equipped, well-intentioned, professional hazmat teams delayed their initial entry for more than one hour, awaiting the arrival and set-up of pools to collect the deconwater.

While the actor-survivors were dying a slow, painful, convulsive death, state and federal officials were debating and insisting that deconwater had to be collected for proper disposal.

By the time the rescuers set up the holding pools and entered the site, nearly 90 minutes later, the “survivors” had expired. The contaminated water was collected but the “victims” died.

**Good Samaritan Provisions**

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Section § 107 (d) Rendering Care or Advice, addresses this issue.

Section 107 (d) (1), often known as the “good Samaritan” provision states: “No person shall be liable under this sub chapter for costs or damages as a result of actions taken or omitted in the course of rendering care, assistance, or advice in accordance with the National Contingency Plan (NCP) or at the direction of an on-scene coordinator appointed under such plan, with respect to an incident creating a danger to public health or welfare or the environment as a result of any releases of a hazardous substance or the threat thereof.”

This provision does not preclude liability for costs or damages as a result of negligence.

Releases of chemical and biological warfare agents due to a terrorist incident are considered hazardous materials incidents and therefore CERCLA §107 (d) (1) could apply, to the extent that there is a release or threatened release of a hazardous substance.

In addition, §107(d)(2) provides that state and local governments are not liable under CERCLA “as a result of actions taken in response to an emergency created by the release or threatened release of a hazardous substance generated by or from a facility owned by another person.”

Section 107(d)(2) would insulate state and local governments from potential CERCLA liability arising from first responder actions.

However, the provision does not apply to costs or damages caused by “gross negligence or intentional misconduct by the state or local government.”

During a hazardous materials incident (including a chemical/ biological agent terrorist event), first responders should undertake any necessary emergency actions to save lives and protect the public and themselves.

Once any imminent threats to human health and live are addressed, first responders should immediately take all reasonable efforts to contain the contamination and avoid or mitigate environmental consequences.

EPA will not pursue enforcement actions against state and local responders for the environmental consequences of necessary and appropriate emergency response

actions.

First responders would not be protected under CERCLA from intentional contamination such as washing hazardous materials down the storm-sewer during a response action as an alternative to costly and problematic disposal or in order to avoid extra-effort.

**Other Liability Issues and State Tort Laws**

EPA cannot prevent a private person from filing suit under CERCLA. However, first responders can use CERCLA's Good Samaritan provision as defenses to such an action. First responders could also be subject to actions under other laws, including state tort laws.

A state's tort law allows individuals and businesses to seek compensation for losses or harm caused by another.

The extent of tort liability of a state or local governmental jurisdiction, as well as individual employees or representatives of that jurisdiction, is established by the tort law of each state. The liability of governmental jurisdictions and their employees may be shaped by factors such as negligence, statutory and discretionary immunity, etc.

First responders should consult legal counsel in their state to discuss authority, status as an agent of the state, immunities, and indemnification.

**Federal Support During a WMD Incident**

Contaminated runoff should be avoided whenever possible, but should not impede necessary and appropriate actions to protect human life and health.

Once the victims are removed and safe from further harm and the site is secured and stable, the first responders should be doing everything reasonable to prevent further migration of contamination into the environment.

First responders should involve state and federal officials as soon as possible to reduce potential liability concerns.

Under CERCLA, the Federal On-Scene Coordinator (FOSC) can determine which environmental regulations are applicable (or relevant and appropriate) to any removal response and may further determine that any such environmental regulation is impracticable to achieve depending on the exigencies of the situation.

If the FOSC determines that it is impracticable to comply with any particular environmental regulation, then the responders (local, state, Federal or responsible party) do not have to comply with that particular environmental regulation.

By involving FOSC, first responders can substantially reduce their potential liability.

In addition, FOSCs have an expanse of resources under the NRS to support state and local responders in determining a solution which best addresses protectiveness of human health and the environment.

The FOSC can provide invaluable assistance in determining clean-up and decontamination needs, health criteria and appropriate clean-up protocols as needed.

FOSC support is even more critical in the aftermath of a WMD terrorist attack when critical post-emergency actions such as agent identification, crime scene sampling, crime scene preservation, and long-term risk evaluation are also being conducted.

**Pre-planning Is Key!**

It may not be technically feasible to contain all the runoff resulting from a WMD incident, but emergency responders may be able to reduce its impact to the environment by pre-planning.

Responders can maximize local resources by using existing response mechanisms as much as possible. Local Emergency Planning Committees (LEPCs) are a good starting point.

LEPCs are established under the Emergency Planning and Community Right-to-Know Act to develop local governments' emergency response and preparedness capabilities through better coordination and planning, especially within the local community.

LEPCs include elected officials, police, fire, civil defense, public health professionals, environmental, hospital and transportation officials, who can work together creatively using available resources to minimize the environmental impact of WMD incidents.

## National Fire Academy's Volunteer Incentive Program

### Background

The Volunteer Incentive Program (VIP) is an intensive six-day educational opportunity designed specifically for the volunteer fire service officer.

Since 1980, the National Fire Academy (NFA) has offered two-week courses year round on its Emmitsburg, Maryland Campus; courses that are considered the best fire officer training available anywhere.

The problem is most volunteers can't take two weeks off to attend these courses. With VIP, that has all changed.

The Academy has compressed two weeks worth of course work into six days, tailored it to the special needs of the volunteer fire officer and still maintained content, quality, and integrity.

VIP courses, the same as with other NFA courses, have recommended college accreditation through the American Council on Education.

Students have the opportunity to meet and exchange ideas and information with colleagues from across the country in an informal setting outside the classroom.

This program, along with the other resources of the NFA, insures a totally successful learning experience, while keeping the time commitment to a minimum.

### Eligibility

Fire and rescue officers within volunteer departments, or those individuals who are the only career person in a volunteer department, who meet the established student selection criteria for the course for which they are interested, are eligible to apply to the VIP.

### Costs

Each student will receive a stipend to cover the cost of round trip coach airfare or actual mileage equal to airfare from point of departure.

Lodging, student materials, books, and ground transportation from/to airports in Washington D.C. are provided by the Academy.

**Start - End**

Classes begin on Sunday morning at 8:00 am and continue through the following Friday at 4:00 pm. Accepted students must travel to the Academy on the day before class begins.

**Course Menu**

- Fire Service Planning Concepts for the 21st Century
- Fire Cause Determination for Company Officers
- Leadership and Administration
- Community Education Leadership
- Challenges for Local Training Officers
- Hazardous Materials Incident Management
- Emergency Response to Terrorism: Incident Management
- Command and Control of Incident Operations

## Electronic Tier II Filing in Louisiana

The Louisiana State Police Right-to-Know Unit, which processes Tier II chemical inventory filings for the Louisiana Emergency Response Commission, maintains a data base of chemical inventory information which is not only state-of-the art and easily accessible to emergency responders (State Police, LEPCs, and fire departments) but to companies throughout the year.

Since Louisiana is at the heart of the chemical and petrochemical industry and historically has had a 500 pound reporting threshold for OSHA MSDS chemicals (versus the 10,000 pound federal threshold), over 12,000 facilities report inventories ranging from one to several hundred chemicals.

After major advances in data processing in the late 1990's, State Police Right-to-Know Unit contracted with IBM to tailor a program that addressed State Police needs for clear accurate information in a format useful for responders, that could be at the same time easily accessed by LEPCs, fire departments, and the facilities themselves throughout the year.

This system was completed, tested, and after several seminars were conducted for the reporting community, went on line in January, 2000 over the Internet.

There are certain minimal basic requirements for Tier II filing over the Internet: a PC with pentium processor or equivalent is recommended ;a modem or LAN connection to the Internet; and a JavaScript-enabled Web Browser (Version 4.0 or better of Netscape Navigator or Microsoft Internet Explorer.

This electronic “e-filing” process begins with users accessing the Tier II website at http://www.dps.state.la.us/lcnweb.nsf to request a User ID and password.

This User ID and password is sent to the user via US mail.

After gathering information for submission of chemical inventories at each facility, users access the Tier II website to enter Tier II filing information for their facility locations.

E-filing is different from traditional paper and electronic filing because data is entered via the web instead of sending paper forms or diskettes.

It encourages real-time updating of chemical and contact information and allows for 24-hour access.

Elimination of paperwork reduces overhead costs to users and to the State.

Online help is available for users with filing questions.

To summarize, benefits of electronic filing in Louisiana include the following. Information can be quickly distributed to LEPCs, fire departments, and Louisiana State Police Right-to-Know Unit.

The facilities can update chemical information continuously as their inventories change.

This facilitates accuracy in reporting.

Electronic filing saves time because the previous year's information is already in the data system.

Information is secure since only authorized individuals have access to their company's facility information.

The public does not have access to this information over the Internet.

More information on Louisiana's Right-to-Know electronic filing is available at the following Internet web sites or by calling the Right-to-Know Unit at (225) 925-6113.

Right-to-Know Website: http://www.dps.state.la.us/lsp/rtkcover.html

**Chemical Safety Network: Community Safety Awards Program: Lake County, Indiana, LEPC**

## Purpose

The Lake County, Indiana, LEPC has implemented a Community Safety Awards Program to recognize significant achievements by industry and municipalities in reducing risks to the public from chemical accidents.

The LEPC has implemented a Community Safety Awards program that encourages industry representatives, among other things, to partner with other companies to ensure compliance and to discuss and share Risk Management Plan (RMP) data, information gathered under the Emergency Planning and Community Right-To- Know Act, and other hazard-related information with the public.

## Background

Lessons learned from a controversy stemming from the transportation and incineration of Navy surplus napalm at a facility located in Lake County spurred the LEPC to find new approaches to risk management.

Building on DOE-prepared materials, the LEPC developed a training program for emergency response to radioactive material incidents.

The LEPC plans to incorporate RMP data into its other emergency management efforts.

## Partnerships

The Lake County LEPC sponsored an RMP Working Group that includes: BP AMOCO; U.S. Steel-Gary Works; Ispat Inland; Rhodia Chemical; Bethlehem Steel; Keil Chemical; Cerestar USA; and Grand Calumet Task Force (a local environmental group).

The partners exchanged technical reporting approaches to ensure consistency, held a joint public exposition to release information on facility RMPs, and fostered the formation of an Industrial Emergency Response Network comprised of 10 companies.

The Network meets monthly to coordinate emergency response and training efforts among the participating companies.

## Funding

Approximately $1,500 was used as seed money for the Program.

**Awards Criteria**

Annual awards are given to industry and municipalities for risk reduction in any of the three areas:

- Chemical Accident Prevention - lowering the potential for chemical accidents through reductions in the use of hazardous chemicals.

  Examples include: substitutions of a hazardous chemical with a less hazardous chemical or reductions in chemical use. Entries are judged primarily on elimination of or reduction in accident scenario vulnerability zones around the facility.

- Emergency Preparedness - improvements to accident response preparations that minimize risks to communities if a chemical accident occurs.

  Examples include: installation of community warning systems, well-executed emergency drills or table-top exercises and safety inspections by local emergency responders and LEPC members.

- Community Outreach - productive and innovative efforts that inform the public about chemical accident risks and respond to public suggestions about reducing those risks.

  Examples include: significant achievements by community advisory panels or facilitating public access to information such as RMPs, TRI reports, or emergency response plans.

**Use of Chemical Countermeasures on Fuel Spills That Threaten Our Water**
(Reprinted with permission from the NFPA Journal, March/April, 1999)

There's no denying that oil consumption is vital in today's world. Much of that oil must be transported over land by trucks, which may be involved in accidents that result in the release of oil into the environment.

Of particular concern are inland oil discharges that reach surface waterways, contaminating rivers, streams, lakes, and ponds, and enter our groundwater, rendering it useless as a source of drinking water.

The impact of such environmental disasters is almost always long-term, and recovery from them may take years.

The United States Environmental Protection Agency (EPA) recogizes the important role firefighters play in containing and cleaning up oil spills and is trying to provide them with information about the use of chemical countermeasures.

**Response to fuel spills**

Spill cleanup involves a number of steps, beginning with an evaluation of the degree of cleanup actually needed. Certain types of petroleum products, such as gasoline, which evaporate quickly, may not require much cleanup, depending on the amount spilled.

When cleanup is indicated, however, it's often up to firefighters, who are first on the scene, to decide the best and safest method to use.

Perhaps the most common method involves sorbent pillows or booms, which are placed on and around the spill to contain and remove it.

If the spill is too large for the first responders to handle, however, the local authorities may turn to state or federal response agencies for help.

These agencies send an on-scene coordinator (OSC), who assesses the situation and draws up a plan to start cleanup activities and control the downstream effects of the spill. Among the methods the OSC may deem necessary are chemical countermeasures.

As defined in Subpart J of the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), chemical countermeasures are "elements, compounds, or mixtures that coagulate, disperse, dissolve, emulsify, foam, neutralize, precipitate, reduce, solubilize, oxidize, concentrate, congeal, entrap, fix, make the pollutant mass more rigid or viscous, or otherwise facilitate the mitigation of deleterious effects or the removal of the pollutant from the water."

The NCP can be found under Title 40 of the *Code of Federal Regu*lations, Part 300.

Such materials include bioremediation agents, dispersants, surface washing agents, and miscellaneous oil spill control agents. Bioremediation agents are microbiological cultures, enzyme additives, or nutrient additives that are introduced into an oil discharge to increase its biodegradation rate.

These products are probably best used on spills that affect the shoreline after heavy oil deposits have been removed mechanically or in sensitive marsh areas where cleanup crews or heavy equipment would cause damage.

As their name implies, dispersants enhance the natural dispersion of oil spilled on water by emulsifying, dispersing, or solubilizing it in the water or by promoting the surface spread of an oil slick to better disperse it.

Because the water must be fairly deep to allow this process to occur without endangering bottom-dwelling organisms, these products aren't appropriate for near-shore waters, shallow fresh-water streams, rivers, or lakes, or near water supply intakes unless an OSC approves them to prevent human health or fire and explosion hazards.

A surface washing agent is any product that removes oil from a solid surface that's been coated with it, such as a rocky beach or a road, using a detergent.

Surface washing agents are sprayed on affected shorelines or roads and substrates, then washed with water at low pressure down to the shoreline, where booms, skimmers, or sorbent materials are used to collect it, or to areas where the runoff can be recovered with vacuum trucks or sorbents.

Miscellaneous oil spill control agents are any other products that can be used to clean up, remove, treat, or mitigate an oil spin. Basically, this category is for products that don't meet the strict definition of any other product type.

Because so much agent must be used if it's to have any effect on the spilled oil, however, these products are generally restricted to small spills.

**How to Get Approval to Use Chemical Countermeasures**

All spills should be reported immediately to the National Response Center at (800) 424-8802.
During a significant spill, the EPA and the regional response team (RRT) may verbally authorize the use of a chemical countermeasure.

They'll need the following information, at a minimum, as part of the approval process:

- The name of the product you propose to use, if it's listed on the NCP Product Schedule, or any information the vendor has provided on the use and effects of the product.
- A material safety data sheet (MSDS) on the product.
- The type of material spilled.
- The location of the spill.
- The amount that has or may be spilled.
- The rate and method of application.
- The nearest water and its connection from or to the spill site.
- The forecasted weather conditions.

You should also define any necessary monitoring strategy.

Remember, the EPA, the RRT, and the affected State must approve the use of chemical countermeasures that affect surface waters.

To help firefighters make informed decisions about spill mitigation, several RRTs have begun to provide the information they need.

Among these are the Region 6 RRT, covering Arkansas, Louisiana, New Mexico, Oklahoma, and Texas.

Additional information on the use of chemical countermeasures and the NCP Product Schedule may be obtained by calling EPA’s NCP information line at (202) 260-2342 or writing to the USEPA, Oil Program Center (5203G), 401 M Street SW, Washington, DC 20460.

If chemical countermeasures are proposed, the OSC must receive approval from the regional response team (RRT) and representatives of the state, unless a pre-approval plan is in place.

There are 13 RRTs, one for each of the 10 federal regions, plus 1 for Alaska, 1 for the Caribbean, and 1 for the Pacific Basin.

Each RRT, which maintains a regional contingency plan, has state and federal government representation and is co-chaired by the U.S. Coast Guard and the EPA.

The RRTs are planning, policy, and coordinating bodies, and, although they don't generally respond to smaller incidents in which low quantities of oil are spilled, they do help OSCs during more major incidents.

Current federal regulation 40 CFR Part 300.900 requires RRTs and area committees to evaluate, in writing, the desirability of using chemical countermeasures during the first hectic hours of a spill, in part because chemical agents may themselves have a deleterious effect on the environment.

Typically, chemical countermeasures are considered only when mechanical cleanup methods are extremely difficult or impossible to use.

Chemicals are to be used in compliance with Subpart J of the National Oil and Hazardous Substances Pollution Contingency Plan.

The EPA lists these products on the NCP Product Schedule, which indicates only that product data has been submitted and technically screened, as required by the NCR

This list doesn't indicate that the EPA approves, encourages, endorses, or authorizes a product.

These data are intended to inform OSCs about the effects of these products on human health and safety and on the environment.

Depending on the type of product fisted, required data may include aquatic toxicity; effectiveness; special handling and worker precautions; ventilation requirements; emergency procedures in the event of skin or eye contact; protective clothing requirements; minimum and maximum storage temperatures; temperatures of phase separations and chemical changes; shelf fife; recommended application procedures; physical properties, including flash point, pour point, viscosity, specific gravity, and pH; and analyses of heavy metals, chlorinated hydrocarbons, and cyanide.

**When may chemical countermeasures be used for road fuel spills?**

For small roadside fuel spills, chemical countermeasures may be used, without EPA or RRT approval, after other available physical cleanup techniques, such as sorbents, have removed the bulk of the spilled material.

However, they may not be applied in quantities that would allow them to run off into surface waters.

Before chemical countermeasures are applied in areas where they may possibly contaminate groundwater, state environmental authorities should be consulted.

Any information the manufacturer supplies on special handling and worker precautions for storage and field application must be noted and followed, as must the product's recommended application procedures.

Emergency workers must use caution when applying chemical countermeasures in closed conduits, such as sanitary or storm sewers, and they must provide adequate ventilation and vapor suppression when using chemicals that increase a spilled fuel's tendency to vaporize.

Many states have their own policies regulating the use of chemical countermeasures.

Firefighters should contact the appropriate state environmental agency before using these products.

Fire departments should also be aware that, although some product labels may indicate that it's safe to wash products and fuel down storm drains or onto the roadside, this isn't the case.

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**Chemical Time Bombs**
FBI Law Enforcement Bulletin, April 2000

The dramatic increase in the seizures of clandestine methamphetamine (meth) laboratories nationwide has created a dangerous situation for private citizens and law enforcement officers alike. Today, encountering hazardous chemicals remains no less dangerous than pursuing an armed suspect.

Police officers receive comprehensive training in many areas of law enforcement. However, very few officers have expertise in firefighting, chemistry, bomb handling techniques, and hazardous waste disposal. Unfortunately, illegal drug laboratories pose deadly threats in all of these areas.

Raiding a clandestine drug laboratory (clan lab) has become one of the most dangerous operations a law enforcement officer can undertake. Officers sometimes refer to clan labs as "chemical time bombs" because they contain highly flammable and explosive materials, lethal chemicals, and even mechanical or chemical booby traps.

Law enforcement has found these makeshift laboratories in apartments, hotel rooms, mobile homes, outdoor sites, and in all types of vehicles. As a result, an officer may inadvertently come into contact with such a laboratory when responding to a domestic violence call or even while making a traffic stop.

Since 1995, police records indicate that at least three meth laboratory suspects are killed in clan lab explosions or by poison chemical incidents each year, with many more receiving serious burns or other injuries from clan lab fires.

Likewise, an increase has occurred in the number of reported injuries to untrained police officers who investigate or dismantle clan labs.

In addition, reports of property damage and injuries to citizens from drug laboratory disasters have increased throughout the nation. In fact, several apartment complexes and a luxury hotel have burned down as the result of these illegal laboratory activities.

For example, in 1997, Kansas City, Missouri, authorities reported fires on an almost monthly basis that originated from the operation of meth labs or the storage of precursor chemicals. In Independence, Missouri, the police chief reported in an interview that at least five deaths have resulted from clan meth lab fires since 1995.

In 1999, more than 99 percent of the clan labs seized by DEA were meth labs. Other illicit drugs like PCP, MDMA, and LSD are manufactured in clan labs, but because of the large percentage of clan labs that produce meth, and its close association with violent crimes, law enforcement investigations have focused on meth clan labs in recent years.

**The Methamphetamine Problem Today**

Experts considered meth a West Coast problem until 1995, when meth production and abuse began to sweep eastward across the Midwest to the Southeast. In Missouri, meth laboratory seizures increased from 2 in 1992 to more than 600 in 1998.

In Iowa, some local police departments have reported that meth-related arrests have surpassed drunk driving arrests.

Statistics demonstrate that meth use and availability have dramatically increased in a short period of time. The Drug Abuse Warning Network indicates that emergency room episodes increased from 4,900 in 1991 to approximately 17,000 in 1997, an increase of 247 percent.

Concurrently, law enforcement seizures of meth and meth laboratories also have increased. In 1999, the DEA participated in the seizure of a record high 1,948 clan labs, the vast majority (99 percent) of which were meth labs.

For comparison purposes, this number was 306 in 1994 – representing a 537 percent increase in just 5 years. In addition, state and local law enforcement officers raided more than 4,400 such labs in 1999.

In fiscal year 1999, DEA arrested 8,680 people for meth trafficking--a 113 percent increase over fiscal year 1996 arrests. The violence associated with this powerful stimulant has had a devastating impact on many communities in the West and Midwest.

Television viewers nationwide watched live footage of a paranoid meth addict who stole an armored tank from a National Guard armory and went on a car-crushing rampage in the San Diego area.

Another meth addict in New Mexico beheaded his son after experiencing hallucinations in which he believed his son was the devil. In Contra Costa County, near San Francisco, police associated meth with 447 cases of domestic violence in 1997.

In previous decades, experts viewed meth as "poor man's cocaine" and as a drug abused predominantly by white individuals with low incomes living in rural areas. Today, meth abusers are found in all segments of society and regions of the country, including the previously untouched eastern regions of the United States, with meth use rivaling cocaine as the drug of choice.

Meth remains very popular with young people at night clubs and all-night dance parties called "raves." Also, some college students use meth to stay awake and study for exams; athletes may use it to relieve fatigue; and some dieters use it to lose weight.

## Effects of Methamphetamine

Methamphetamine, a Schedule II controlled substance, is a central nervous system stimulant and more potent than amphetamines. It has legitimate medical uses for treating some illnesses such as narcolepsy, yet it remains a lethal and unpredictably dangerous drug when abused.

The effects of meth are similar to cocaine, with users experiencing a sense of increased energy and euphoria, but the duration of the high lasts longer--from 6 to 14 hours. Chronic meth abusers usually inject or smoke high levels of the drug every 2 or 3 hours during day-long binges in which they consume the drug continuously.

This often results in the abuser staying awake for more than a week and experiencing extreme irritability from sleep deprivation, increased nervousness, anxiety, paranoia, hallucinations, and violent or erratic behavior.

## Methamphetamine Production and Trafficking

In 1994, trafficking organizations based in Mexico began to take control of the production and distribution of meth in the United States. Before this, the Outlaw Motorcycle Gang remained the primary meth traffickers. Although this gang remains active in meth production, they do not produce the large quantities distributed by the aggressive traffickers from Mexico.

Mexican organizations dominate wholesale meth trafficking using large-scale labs to produce the drug in their own country and the southwestern United States. In 1999, the DEA estimated that organized crime groups operating out of Mexico and California controlled 80 to 90 percent of meth production and distribution in the United States.

While clan labs in California continue to produce more meth than any other region, thousands of independent U.S. traffickers in the Midwest, with growing numbers in the Southeast, operate large numbers of the smaller "mom and pop laboratories. Unfortunately for law enforcement, meth is a very simple drug to manufacture.

Except for marijuana, meth remains the most abused illegal drug that an individual can make alone. Unlike many other synthetic-based illegal drugs, it does not take a chemist to produce meth. In fact, fewer than 10 percent of those arrested for manufacturing meth are trained chemists.

Meth laboratory operators or "cooks" usually are individuals who have little or no chemical training and simply learned a formula in prison or from the Internet.

These small drug laboratory operations make importation and interdiction efforts irrelevant when, with easily obtained chemicals, an individual with the basic knowledge of how to cook meth can independently produce thousands of dollars worth of this dangerous drug.

**Chemicals Used to Manufacture Methamphetamine**

Although the complete list of formulas, hazards, and chemicals employed to produce meth remains extensive, the vast majority of meth laboratories seized today use a common ephedrine/ pseudoephedrine reduction method of manufacturing.

This method requires a chemical not produced in the United States; however, laboratory operators can find the precursor chemicals needed in many over-the-counter cold medicines. Some clan lab operators purchase dozens of bottles of these cold remedies in order to extract the ephedrine or pseudoephedrine from the tablets.

Meth cooks sometimes use a formula for production that uses two extremely dangerous and highly volatile chemicals--sodium metal and anhydrous ammonia. Sodium metal can ignite when it comes into contact with water, and anhydrous ammonia is a deadly respiratory hazard.

Some clan labs may even contain chemicals such as sodium cyanide, which, if accidentally mixed with another type of chemical found in the same lab, can produce a deadly hydrogen cyanide gas. Clearly, law enforcement teams conducting a clan lab raid always should bring a qualified chemist with them.

**Environmental Issues**

In addition to the risk of explosive gases, chemical contamination from the hazardous waste of these clan labs poses a serious threat to the environment and consequently to the health of unsuspecting citizens in nearby communities. Each pound of meth manufactured in a clan lab generates up to 5 or more pounds of toxic waste.

Clan lab operators routinely dump such waste into local streams, rivers, and sewage systems in order to cover up the evidence of their illegal operations.

Moreover, chemical reactions that occur during the manufacturing of meth produce chemical vapors that can permeate walls, carpets, plaster, and even the wooden structures of buildings.

The average clan lab costs $3,000 to clean up. However, large production labs, because of the significant quantities of toxic chemicals and higher hazardous waste disposal charges, can result in clean-up costs exceeding $100,000.

Annually, the overall cleanup of these labs costs the DEA and other government agencies millions of dollars.

**Clan Lab Safety Training**

With clan labs, the risk of explosions, fires, and direct contact with toxic fumes, poisonous gases, and hazardous chemicals always exist. Size does not matter when it comes to the danger level involved in a clan lab raid.

In fact, the smaller labs are usually more dangerous than the larger operations because the "cooks" are inexperienced chemists with little regard for safety.

In addition to the physical danger, police officers who improperly dispose of toxic waste materials also could be civilly liable under the federal Resource Conservation and Recovery Act, thus making clan lab raids an especially risky aspect of drug law enforcement.

Consequently, any law enforcement officer involved in clan lab raids must receive thorough training on safe-handling techniques. To meet this need, in 1987, the DEA created a special training unit for DEA special agents and task force officers on how to safely perform clan lab raids.

Federal regulations now mandate that all federal, state, and local law enforcement officers receive at least 24 hours of training on how to handle hazardous chemicals prior to conducting a clan lab raid. The DEA conducts both state and local certification schools at Quantico, Virginia, and at a training site in Overland Park, Kansas.

This 1-week school qualifies state and local police to raid, process, and dismantle clan labs, and it provides instruction on the latest intelligence trends, chemical diversion, and clan lab investigations.

In addition, a specialized DEA unit frequently conducts in-service training and seminars for law enforcement groups. This unit also provides the annual recertification training mandated by federal regulation.

**Fundamental Rules of Chemical Safety**

Police officers without specialized training in the unique types of hazards posed by clan labs never should attempt to investigate or dismantle these "chemical time bombs."

Police supervisors must advise their personnel that, if they should inadvertently encounter a clan drug lab, they should not touch anything, and should secure and evacuate the area immediately.

Even those officers who have graduated from a qualified laboratory safety school always should remember some fundamental rules of chemical safety when encountering a clan drug lab.

- Leave the area, secure the location, and notify the DEA or a police narcotics unit with the proper equipment and certified personnel.
- Do not smoke in or near the lab.
- Never touch, taste, or smell any type of equipment or chemicals.
- Always wear the proper safety equipment.
- Always read the safety labels and warnings on seized chemical containers; however, do not rely on these warnings as some suspects may switch the labels or the containers.
- Do not mix any type of chemicals. Some chemicals will ignite, explode, or produce poisonous gas when combined with other chemicals--even contact with water can cause some chemicals to ignite.
- Do not use tools or devices that produce sparks or friction (e.g., flash bangs or some types of breaching devices).
- Do not turn light switches on or off or connect or unplug electrical devices. The electrical spark could cause an explosion if certain chemicals are present in the atmosphere.
- Always fully decontaminate all clothing and equipment when exiting a lab and remember to keep the prisoners' clothing as evidence because a laboratory exam usually can detect chemical residues--further evidence of participation in the manufacture of controlled substances.
- Ensure that emergency medical assistance (e.g., fire department, paramedics, life-flight helicopter) remains available prior to executing the raid.

**Conclusion**

Without question, the increasing distribution of methamphetamine throughout the United States by international drug organizations remains a serious problem for every law enforcement agency.

This threat, compounded by the increasing number of clan labs operated by violent criminal organizations, coupled with a growing number of smaller "mom and pop" laboratories, results in an escalating likelihood that law enforcement agencies across

the  country will encounter more clan meth labs.

Impetuous investigations of these clan drug labs without proper safeguards may recklessly endanger the lives of law enforcement officers.

- Two suspects in a San Diego, California, hotel room died of poison phosphine gas fumes while manufacturing methamphetamine. Four police officers responding to the emergency call were overcome by fumes and hospitalized.

- In Aguanga, California, three children died and their mother received critical burns from an explosion caused by a clandestine drug lab operation in a trailer house.

- A woman manufacturing methamphetamine in Kansas City, Kansas, was killed when a drug laboratory ignited and burned down the house.

| Commercial Products | Chemicals | Hazards |
|---|---|---|
| • Battery Acid, Drain Cleaner | Sulfuric Acid | Corrosive Acid |
| • Camera Batteries | Lithium | Water Reactive |
| • Coleman Fuel | Petroleum Distillates | Flammable |
| • Kerosene, Lacquer Thinner, Mineral Spirits, Denatured Alcohol | Mixture of Alcohols | Flammable |
| • Epsom Salts | Magnesium Sulfate | Nonhazardous |
| • Heet | Methyl Alcohol | Flammable |
| • Iodine Crystals, 7 % Tincture of Iodine | Iodine | Irritant |
| • Muriatic Acid | Hydrochloric Acid | Corrosive Acid |
| • Nonprescription Cold Medicine | Ephedrine / Pseudoephedrine | Nonhazardous |
| • Red Devil Lye | Sodium Hydroxide | Corrosive Base |
| • Road Flares | Red Phosphorous | Flammable |
| • Starting Fluid | Ethyl Ether | Explosive |
| • Ammonia | Anhydrous Ammonia | Toxic |

This reflects only a partial list of products commonly found in clan labs. Officers should

remember that any one item does not indicate the manufacture of methamphetamine.