

STATE AND NATIONAL RESOURCES FOR COMMUNITY SPILL DISASTER PREPAREDNESS IN THE UNITED STATES*

LARRY R. FROEBE**

Ecology and Environment, Inc., 1509 Main St., Suite 814, Dallas, TX 75201 (U.S.A.)

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Summary

United States local contingency planning is considered from the special perspective of the resources available at the state and federal levels for hazardous materials accidents and emergency spills. The National Response Network for the United States is described in terms of the units and levels of government constituting that capability. Special features of local plans are discussed, and communications with state and federal response agencies are emphasized. State and federal resources for hazardous spill planning and response are described, particularly within the context of the regional and national response teams. The additional benefits of the aggressive assistance of commercial and industrial assistance are discussed, and the additional benefits of local spill planning to the community are described. The article lists the regional U.S. Environmental Protection Agency contacts for spill response planning assistance.

Introduction

Communities have an obligation to provide for protection from hazardous oil and chemical accidents and spills. A capability for this protection exists in the United States through the National Contingency Plan (NCP) [1]. However, there are incidents for which cost-effective response by the federal government is not practical. Similar situations apply to state response capability. Communities, then, must assume some responsibility for emergency spill response. The potential for accumulated long-term effects from even seemingly small incidents and the need to track these incidents at the state and federal level suggests that considerable additional support for the national network could be obtained through more interactive use of local capabilities. And, just as better local capability for mitigating hazardous spills increases our national capability, so do national and state capabilities act as resources for more effective community protection.

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**Larry R. Froebe was the Technical Assistance Team Leader in EPA Region VI during 1980–1982 on a contract with the U.S. Environmental Protection Agency.

No matter where a spill incident occurs, it always happens at a locality, and there is some "local" jurisdiction (municipal, state, federal land management) with obligation for protection of the public and the environment. In general, in every United States Metropolitan Statistical Area (MSA) the resources are present to mobilize realistic, viable local response capabilities. This discussion will be directed to those MSAs. The *national* network will be considered from the perspective of the *local* response obligation, and the capabilities at the state and national levels will be viewed as resources to meet that local obligation.

National Environmental Emergency Response Network

The United States National Response Network is based on the National Response Team (NRT), the individual Regional Response Teams (RRTs), and the capabilities from the regional EPA offices, the Coast Guard, and state and local governments. Control of the threat of an unscheduled, uncontrolled spill to the public health and safety must fall to government (and, by law, to the spiller). The contributions of industries, the universities, and the commercial sector can be of immense importance.

Network elements

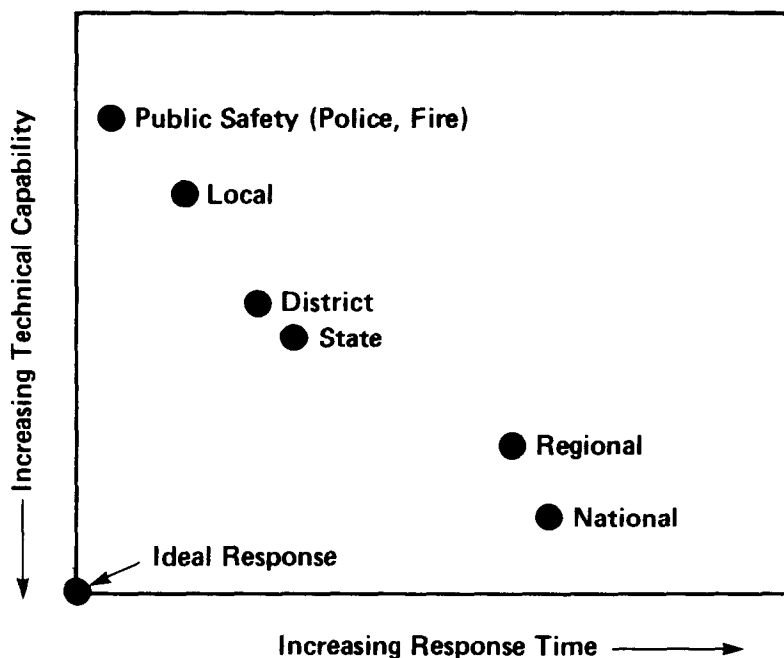
Government agencies with response obligations at the national and state levels are assigned by legislation, regulation, Memorandum of Understanding, or Executive Order. Local capabilities usually come together under the Mayor or City Manager and may or may not interface on a formally recognized basis with state agencies such as those who belong to the RRT. Local capabilities include the traditional public safety departments and environmental agencies such as the fire department, police, emergency medical service, and the health department, plus other groups such as civil defense, industry and university consultants, the Red Cross, the weather service, and, in some cases, military bases. The spill response capability at the local level may or may not be centered in a government agency. For instance, the Regional HazMat Team centered in Dayton, Ohio and made up of members from the 26 area fire departments and over 10 technical advisory groups has base funding from 8% of the annual budget of the Miami Valley Disaster Services Authority [2].

Network function

The levels of government can be viewed as providing different levels of cost-effective response based on response time and technical capability. Within the past few years response time at all levels of government has shortened remarkably. What used to be a several-day response time at the federal level is now a matter of hours based on increased numbers of EPA

On-Scene Coordinators (OSCs) and the use of Technical Assistance Teams (TATs) under contract to the EPA. Our National Response Network works most cost-effectively when the mobilization time and the size of the incident are considered. In general, mobilization time along with the resources and abilities for handling increasingly larger incidents increases in the order: local < state < federal. (There is the special case where the incident location is a city where a state or federal response team resides.)

The relative "response-ability" of the various units of the National Response Network compared with the ideal response of infinite technical capability delivered in zero response time is shown in Fig. 1. The diagram is quali-



NOTE: This figure does not reflect the special case in which a district, state, regional, or national spill response team is centered in the locality where a spill occurs.

SOURCE: AWWA Seminar Proceedings—Hazardous Material Spills, by permission of the Association, copyrighted 1977 by the American Water Works Association, Inc., 6666 West Quincy Avenue, Denver, Colorado 80235, L.R. Froebe, "State and Local Response Capabilities for Material Spills Hazardous to a Water Supply," and from Hazardous Materials Spills Handbook, copyrighted 1982 by McGraw-Hill, Inc., 1221 Avenue of the Americas, New York, N.Y. 10020, by permission.

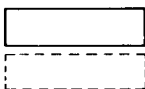
Fig. 1. "Response-ability" of United States spill response units.

tative but provides important perspective for local plans. For instance, although national response (the NRT) and regional response (the RRT or an EPA or Coast Guard OSC) are different parts of the NCP network, a regional response with the technology and authority of federal law can come from a regional office just a few states away from the spill locality. National response involves the ultimate technology including the most capable personnel and one-of-a-kind equipment, such as a mobile water treatment unit (see e.g. Refs. [3-6]) or a hazardous materials incineration unit [7, 8] on a semi-trailer truck bed, which may require several days for delivery. A similar relation exists on a reduced scale between district (sub-state areas such as groups of counties or special consolidated population areas) and state response. In this case, a district response may be quicker, but special generators, booms, skimmers, or similar containment and mitigation equipment may be delivered only from state headquarters because of cost-effective budget constraints.

The first response to a spill will usually be by the local governmental jurisdiction; they are closer and can respond quicker to the first call. Given the typical hierarchy of response times, network response is depicted in Fig. 2. In the case of *minor* incidents, perhaps an auto accident where fuel or oil had leaked onto the street, the local response controls and mitigates the incident entirely, as by spreading sand on the roadway to allow evaporation while maintaining traction, so there is no need for further interaction in the network. In a *small* incident, which local response units can mitigate in a time shorter than the state can mobilize a meaningful response, the incident can be mitigated with only reports to the state for record keeping. In *medium* incidents involving potential environmental impact and requiring several hours for mitigation, both the local and state responses would be implemented to work side by side within the prearranged limits of their author-

	INCIDENT SIZE			
	MINOR	SMALL	MEDIUM	MAJOR/DISASTER
FEDERAL/REGIONAL			REPORT	RESPONSE
STATE/DISTRICT		REPORT	RESPONSE	RESPONSE
LOCAL	RESPONSE	RESPONSE	RESPONSE	RESPONSE

LEGEND



Full Contingency Plan Implementation

Verbal Reporting with Follow-up Copy of Incident Report Only

This representation does not preclude a response from a higher level of government in cases of special interest (evacuations, public water supply impact, political interest), or where the locality is the same as the site of higher government offices.

Fig. 2. National spillfighting network functions.

ities and responsibilities. Reports to the federal level (the National Response Center, the EPA Regional Response Center office, and/or the Coast Guard district office) are made along with a follow up copy of the final incident report. In the case of a *major* hazardous materials incident, the contingency plans at the local, state, and federal (regional and/or national) levels are implemented, once again to allow the various capabilities to work side by side to mitigate the adverse impact.

The continuity of the National Response Network that transforms the collection of many response units into a synergistic network is promoted by *communications*. Working relationships on a first-name basis among the various levels of government are promoted while developing a local response plan which is distributed to the state and federal agencies comprising each community's response resources.

Local plans

The topic of local plans has been described elsewhere [9–13]. However, there are concepts important to local plans which should be included here to describe the value of the local perspective.

Local officer-in-charge

The chief officer for a locality is the highest elected official, and spill response operations are conducted through him or his (her) designated representative. For spills, this is usually the fire chief, but the mayor or city manager may be involved. In some instances, the fire chief or the local elected official in charge may defer to state or federal response people, or there may be direct consultation with elected state officials if appropriate.

Synergism through agency interaction

The local plan represents a new symbiosis. The fire service is the traditional first response agency. (It should be understood that in most cases the police or law enforcement is actually the first response on the scene.) In the fire response organization, spills are usually the responsibility of the rescue unit or a special hazardous materials unit, which itself usually responds on the second alarm. The fire service and other local public safety organizations play the central role in the mitigation of hazardous chemical emergencies for threats to public health and safety. However, there are concurrent functions involving environmental protection and the protection of public health that public safety units will never be able to provide cost-effectively (unless the traditional mission of the public safety service is changed). The fire service, which above all else must provide rapid response, cannot also provide lengthy involvement in spills requiring several days for mitigation. This is the basis of the relatively new symbiotic relationship between local public safety

response units and other units with spill response missions. A prime example at the state level is the State of Louisiana Highway Patrol Hazardous Materials Response Team which benefits from the assistance of the Louisiana Department of Natural Resources in extended cleanups and environmental monitoring. At the local level the symbiosis would involve the fire service and a local environmental agency, the health department, or a special spill response team.

Interaction of community agencies for spill control has been increasing in recent years. Community response capability is becoming technically competent and fiscally viable. The following community agencies and elements are present in every MSA to support local plans:

1. Fire Service;
2. Law Enforcement;
3. Emergency Medical Service;
4. Disaster Services Authority (Civil Defense);
5. Health Department, City and/or County;
6. Public Utilities;
7. Streets and Sanitation Dept.;
8. American Red Cross;
9. Volunteer service from universities, technically oriented industry and laboratories, and technical professional organizations such as the American Chemical Society and the American Geological Society;
10. Hospitals and medical centers with medical consulting staffs for toxicology and poison control;
11. Heavy equipment contractors;
12. Elected officials: county commissioners, mayors, city managers; and
13. Weather service (usually at airports; supported by NOAA, a federal agency).

In addition to these elements, there may be military bases or district offices of state agencies, or local offices of federal agencies (such as the Department of Transportation or the Federal Aviation Administration). These are all elements that can be part of a viable local plan.

Development

A useful tool in convening the various elements of the local plan is some sort of hazardous material/waste committee initiated by any of the participating groups which perceives the need. It is important to the compatibility of local, state, regional and national plans to follow the outline listed in Table 1. And even more important than plan compatibility is the communication with state and federal response people as resources for local planning and continuing working relationships [14]. Contacts and demarcation lines for each EPA Regional Emergency Response Office are shown in Table 2 and Fig. 3.

TABLE 1

Recommended format for a local contingency plan^a

	Letter of promulgation
	Record of amendments
	Table of contents
	List of effect pages
100	Introduction
	101 Authority
	102 Purpose and objective
	103 Scope
	104 Abbreviations
	105 Definitions
200	Policy and responsibility
	201 Federal policy
	202 Related state policy
	203 Mutual aid local policy
	204 On-scene coordinator responsibility
	205 Nonlocal responsibility
300	Planning and response considerations
	301 Oil and hazardous substances transportation pattern
	302 Transfer storage and processing facilities
	303 Historical spill considerations
	304 Hydrological and climatological considerations
	305 Local geography
	306 Highly vulnerable areas
	307 Local response resources
	308 Waterfowl conservation
	309 Endangered species
400	Response organization
500	Operational response actions
600	Coordination instructions
	601 Delegation of authority
	602 Notification
	603 Coordination with special forces
	604 Termination of response activities
	605 Resolution of disputes
700	Procedures for reviewing and updating the local contingency plan
Annex I	1100 Distribution
Annex II	1200 Pollution response personnel assignments
Annex III	1300 Geographical boundaries
Annex IV	1400 Notifications, communications, and reports
Annex V	1500 Public information
Annex VI	1600 Documentation for enforcement and cost recovery
Annex VII	1700 Funding
Annex VIII	1800 Cleanup techniques and policies
Annex IX	1900 Arrangements for nonlocal groups
Annex X	2000 Interagency support
Annex XI	2500 Geographical-action directory
Annex XVI	2600 Response-assistance directory

^aAbstracted from National oil and hazardous substances pollution contingency plan, *Fed. Reg.*, 45 (55, part III) (March 19, 1980) 17850.

Besides the development of an overall community local plan, each of the participating groups benefits from developing their own plan which promotes individual agency awareness and contributes to implementing the overall local plan.

TABLE 2

EPA Regional Emergency Response Office addresses for contact by local response programs

<p>Region I Chief, Oil & Hazardous Materials Section Surveillance and Analysis Division 60 Westview Street Lexington, MA 02173 (617) 861-6700</p>	<p>Region VI Chief, Emergency Response Branch 6ESE 1201 Elm Street First International Building Dallas, TX 75270 (214) 767-2720</p>
<p>Region II Chief, Emergency Response and Hazardous Materials Inspection Branch Environmental Services Division Edison, NJ 08837 (201) 321-6657</p>	<p>Region VII Chief, Emergency Planning & Response Branch Environmental Services Division 25 Funston Road Kansas City, KS 66115 (816) 374-4482</p>
<p>Region III Chief, Environmental Emergency Branch Curtis Building 3ES30 6th & Walnut Streets Philadelphia, PA 19106 (215) 597-3024</p>	<p>Region VIII Chief, Emergency Response Branch Environmental Services Division 1860 Lincoln Street Denver, CO 80295 (303) 837-2468</p>
<p>Region IV Chief, Emergency Remedial & Response Branch 345 Courtland Street, NE Atlanta, GA 30365 (404) 881-3931</p>	<p>Region IX Chief, Emergency Response Section T-3-3 Compliance & Response Branch Toxic & Waste Management Division 215 Fremont Street San Francisco, CA 94105 (415) 974-8132</p>
<p>Region V Chief, Spill Response Section Environmental Services Division 5SEES 536 South Clark Street Chicago, IL 60605 (312) 353-2316</p>	<p>Region X Chief, Environmental Emergency Response Team Environmental Services Division 1220 6th Avenue Seattle, WA 98101 (206) 442-1263</p>

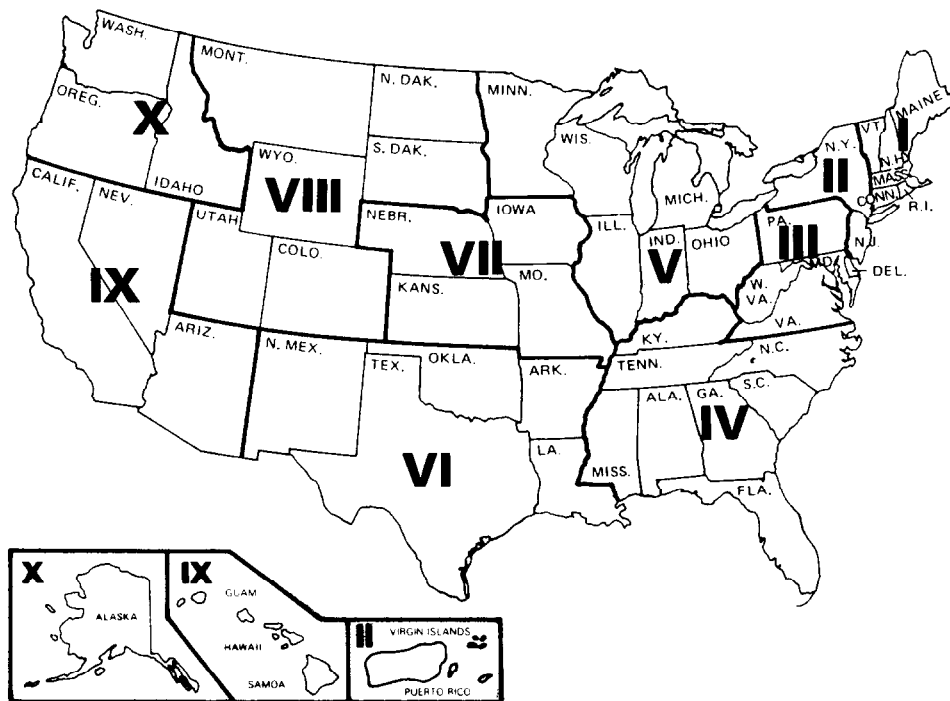


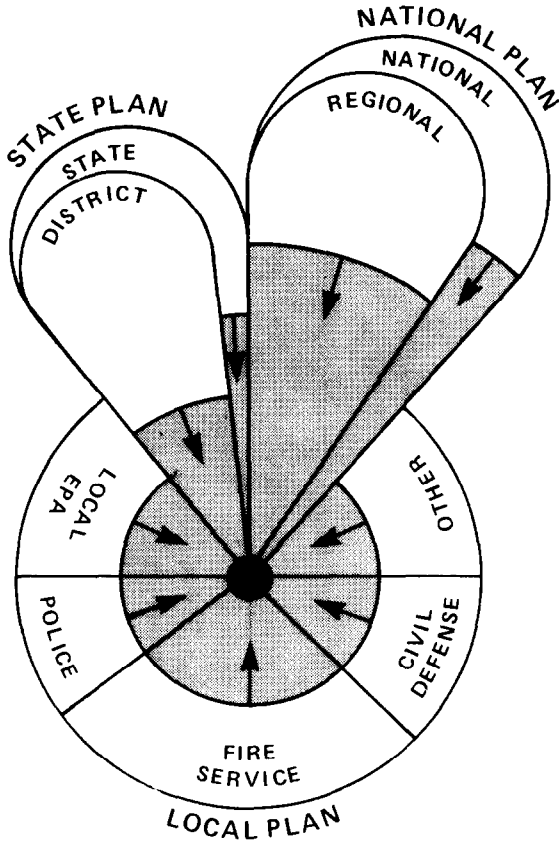
Fig. 3. Regional lines of demarcation of U.S. EPA regional offices.

Perspective

Figure 4 depicts the contributions to a local plan. Distributed about the spill focus (at the center) are the various response units usually responding to a spill. The label "Local EPA" represents a local environmental agency (air, water, general pollution control), the health department, or a special spill response team. The "other" designation represents consultants, cleanup contractors, commercial or industrial response teams, university consultants, industry representatives, and other public service agencies. The local plan incorporates state and national plans as natural extensions of local capabilities.

Implementation

There is an important distinction between spill response and spill mitigation. In general, the term "response" has applied to the process of evaluating a spill and seeing that it gets cleaned up *by others*. This is true of state and federal response teams, and while these teams may conduct comparatively sophisticated monitoring or technical evaluations, it remains that the steps for compliance with state and federal laws will be carried out by the spiller or a cleanup contractor hired by the spiller or by the response people. The



The dot at the center represents the spill; it is surrounded by the various response units.

Fig. 4. Distribution of response capabilities in the local spill response plan.

traditional role of the local fire department is hands-on suppression and mitigation, no matter how dangerous the incident. The exotic and formidable hazardous characteristics of hundreds of thousands of chemicals can require more capability than even the fire service can muster cost-effectively. In these cases, there needs to be a spill team capability for augmenting the yeomen's hands-on work of the fire service. While the most logical implementation of a local plan may seem to be through the local fire service, it should be understood that a "response" capability is still needed at the federal, state, and local levels, and that specialized spill teams are valuable resources for local plan implementation.

The basis of new local capabilities is training. Free training for local government response personnel is usually available from the state environmental agencies, fire marshall, or fire academy. Free national training is avail-

able through the EPA and through FEMA (see later). The best contact for all these opportunities and others is through the RRT agency at the state level and through the regional EPA and Coast Guard offices. There are many commercial training courses available from universities, the railroads, independent consultants, professional societies, and other groups for a fee.

Implementation of local capability is being aided by the National Association of Local Governments on Hazardous Waste directed to, among other goals, successful local spill response capability*.

The protection of local response persons dealing with many subtle threats through chemical exposure must include a health and safety program [15, 16] comparable to that followed by the EPA and the Coast Guard. Such a program includes standard operating procedures for choice and use of levels of personnel and respiratory protection, site entry and exit procedures, and delineation and setup of the hot zone, the contamination reduction area, and the support area with the command post. Personnel health protection is monitored through physical examinations, site medical monitoring during extended operations, and personal radiation monitoring in a thermoluminescent dosimeter survey program. While it might be conjectured that local program costs are prohibitive for supporting such a program, it must be realized that chemical exposure threats to response personnel as well as innocent bystanders are real and serious. The liability from suits filed after such an unfortunate incident can be astronomical: On January 10, 1979 a Norfolk and Western Railway train derailed near Sturgeon, Missouri, causing a 20,000 gallon spill of *ortho*-chlorophenol contaminated with traces of dioxin. The massive litigation arising from 63 real or perceived chemical exposures during the cleanup resulted in judgements totaling 58 million dollars. Along with about 8 million dollars in additional out-of-court prehearing settlements, the judgement awards came to over one million dollars per person!

State and national resources

There are two general areas of valuable assistance for local plans available at the state and national levels. (1) *During the planning and implementation process*, it is important to be in communication with the emergency response offices of both state and federal OSCs. Such communication will insure the compatibility of plans, and the years of experience at the state and federal levels will improve the efficiency of local planning. The state and federal offices are centralizing points for the collection of local plans, and individual local governments can promote development of capabilities through communication with the state and federal levels and among other local governments.

*For additional information on joining and supporting NALGOHW contact Mr. Ken Kirk, Executive Director, National Association of Local Governments on Hazardous Wastes, 1015 18th St. NW, Suite 200, Washington, DC 20036, tel.: 202-835-2206.

(2) *During the response and service phase*, state and federal response teams can be of direct assistance in emergencies, or they can be of indirect assistance via the telephone reporting procedures common to the National Response Network. Once again, experience at the state and federal levels can be of enormous value, especially early in new local programs. What may be a formidable challenge in dealing with a newly encountered spill situation or a new containment or mitigation technique may be commonplace for seasoned response specialists at the state and national levels. Some specific areas of assistance follow.

State resources

State plans, whether through the state EPA, the Department of Natural Resources, the Department of Public Service (the highway patrol), or similar agencies have been in use for years. More recently, state plans for spill response are incorporating federal local plans written by OSCs at the federal level for individual counties and environmentally sensitive areas (see National Resources). While there is nothing to preclude local/federal contact, the most efficient contact is through the state emergency response team, especially since the state will provide more rapid response, locally knowledgeable personnel, and access to the RRT when appropriate. Local governments can participate on the RRT [17] at the discretion of the state RRT representative. The implementation of federal legislation, most notably RCRA [18] and the Superfund Act [19], has increased the importance of state involvement in spill response and control of hazardous waste sites. Most states have delegation for RCRA*, and Superfund Act regulations require that in most cases the state provide 10% of the monies for cleanup of uncontrolled hazardous waste sites in their jurisdiction. The governor is the chief executive officer for implementation of state response capabilities, and acting through his representatives in the various state agencies, assistance for local plans can be provided. For instance, the state police may provide statewide communications and traffic and site control; the state posts of the National Guard may assist with site control and evacuation assistance; the civil defense agencies may assist with communications, vehicles and tools as well as providing an important link to the Federal Emergency Management Agency through the state Adjutant General; the Department of Natural Resources may assist with identification and protection of sensitive areas for plants, wildlife, and groundwater; the State Health Department may sample wells and provide lab services; the State Highway Department may be a good source of heavy equipment 24 hours a day; the state fire marshall's office may assist in accessing mutual aid systems statewide for specialized equip-

*Full delegation for RCRA enforcement includes a requirement for State Preemption, the prohibition of local RCRA-related rules and regulations being more stringent than state regulations since that could impede the disposal of hazardous waste. This requirement may affect local rulemaking for hazardous material control.

ment or materials (such as foams for vapor suppression or, as in Ohio, special district response vans) and the state environmental organization is usually the prime spill response unit. (consider for comparison the state of Louisiana where the State Police and its Hazardous Materials Response Unit are the prime response units.)

National resources

The Superfund Act encompasses many provisions by reference of a number of major acts for the control of chemical materials and the protection of the environment [20]. Under Executive Order 12316 of August 14, 1981, the President delegated authority for federal removal actions (emergency cleanups) primarily to the EPA and the Coast Guard.

The EPA. While response procedures may vary somewhat in the individual regions, the EPA is the prime response agency for national level *inland* spill response (see for comparison, The Coast Guard, later). The first EPA response will be by regional OSCs or by the TAT, [21] response teams provided under contract to the EPA. In most cases the cleanup is documented and facilitated by the TAT, but in the event that the cleanup would require EPA assistance, an EPA OSC would respond with the option on the concurrence of the Regional Administrator to commit up to \$250,000 for the beginning of the cleanup. Further funding would then be approved through the regional and national EPA offices. In this case, the cleanup would be funded by the federal government with the OSC directing the actions and considering state and local input. EPA would then be eligible to pursue by administrative and legal means cost recovery of the cleanup fee plus a penalty of up to three times that fee, a total of four times the cleanup cost. In the event of extenuating circumstances or extended remedial cleanup, the EPA could dispatch their Field Investigation Team (FIT) [22–25] to characterize the site by techniques including geophysical surveys (magnetometer, seismic, resistivity, conductivity, and ground-penetrating radar); sampling (air, land, water); analysis of samples with legally accepted procedures for chain-of-custody, quality assurance, and quality control; evaluation of analytical results; preparation of site safety plans and site entry procedures; and conduct of site entry and exit with procedures for decontamination of personnel, equipment, and vehicles. The EPA also exercises extensive enforcement authority in appropriate cases.

The Environmental Response Team (ERT) is the elite response unit of the EPA, stationed in Cincinnati, Ohio and Edison, New Jersey in support of the NRT for those situations requiring the maximum expertise of the EPA and the NRT. It is accessed through EPA, the RRT or the NRT.

The NCP recommends that EPA OSCs develop and maintain federal local contingency plans (usually on a county-by-county basis) for high-probability-incident and sensitive areas.

A number of EPA reports and manuals have been published which may be

of assistance to locals in formulating local plans. Contact with EPA will provide more information on those publications currently available.

EPA has access to OHMTADS [26], an on-line database system with physical and environmental data on over 1000 chemicals. While this service is mainly for the support of federal OSCs, the EPA (or the Coast Guard, RRT, or the NRT) may access it during a local response to aid in assessing the hazard risk of a reported spill or in tracking potential manufacturers of the material based on the chemical name, mode of transportation and other information which can be transferred by phone.

Training is provided tuition-free to local response personnel through EPA courses offered in Cincinnati, Ohio; Edison, New Jersey; and other cities.

The Coast Guard. The Coast Guard is the prime response unit for oil and chemical spills in the ports and waters of the United States, including those coastal land areas agreed to between the EPA and the Coast Guard by Memorandum of Understanding and published in the applicable Regional Contingency Plan (RCP). Three strike teams are maintained in constant readiness on the Pacific, the Gulf, and the Atlantic coasts. These units maintain high levels of physical and technical training and will respond to aid with spills at any location where requested by the RRT or its member agencies. The Coast Guard is required to maintain federal local plans for all areas under its jurisdiction, and these can be a resource to the local plans in those areas since they identify sensitive areas and facilities where spills might occur, and they list potential cleanup contractors, equipment, and phone numbers for many support units in the area.

The Coast Guard can access the HACS air/water dispersion computer model [27] through the National Response Center (NRC, tel.: 800-424-8802) which they maintain for the National Response Network. (The EPA also has this capability.) The input information required for this model is extensive, and the best way for local units to access this valuable tool in predicting the dispersion of pollutants in the air or water is through the state environmental agency who, as a member of the RRT, has good working relationships with the NRC. Some state and regional response offices may also have simplified rapid estimation capability for air or water dispersion, and it is wise to contact those offices in advance to check on this possible resource.

Of the reference literature available from the Coast Guard, the most notable is the four-volume Chemical Hazards Response Information System (CHRIS) [28].

Other Federal Agencies under the NCP. The NCP (also the NRT, and the RRT on the regional level) includes the capabilities of many federal agencies including the EPA, the Department of Defense including the Army Corps of Engineers [29] and FEMA, the Department of Health and Human Services (including the Food and Drug Administration, the Center for Disease Control, and the National Poison Control Center), the Department of Transportation (including the Coast Guard, the National Transportation Safety Board, the Office of Hazardous Materials, the Federal Highway Administra-

tion, and the Federal Railroad Administration), and the Department of Commerce (including the National Oceanic and Atmospheric Administration). In general, local access to these is through the state member agency of the RRT, but FEMA can also be accessed through local civil defense and the state disaster services agency.

FEMA is developing training courses within their Federal Emergency Management Institute (EMI) in Emmittsburg, Maryland on emergency response and hazardous waste. More information on the availability of this training which is designed for municipal officials and planners should be available through the local civil defense office*. Hazardous material training for firefighters is under development in the Department of Commerce's National Fire Academy and can be accessed through EMI.

NOAA has a strong program sponsored by interagency federal grant monies to supply Scientific Support Coordinators (SSCs) to support the OSC of the RRT or the NRT in emergency response mitigation and environmental assessment [30].

Commercial services

In recent years the commercial sector has responded vigorously to the challenges associated with implementation of the Superfund Act. What once was a handful of cleanup contractors for oil or chemical spills is now a vast array of companies for cleanup, consulting, and management.

A new approach of enormous growing popularity is the association of technical management companies with dirt-moving contractors for hazardous waste cleanup. The value in this type of relationship is that heavy equipment, often sitting on overhead time, is now more fully utilized for additional work managed by companies that can deal with the technical aspects of the problem but lack the heavy equipment to carry out the work. A potential detractor in this type of relationship is the common lack of a health screening program with medical baseline data on each worker and followup examinations for the protection of the workers and the company. Unfortunately, the work of cleanup contractors is fraught with liability and the potential for litigation.

CHEMTREC (the Chemical Transportation Emergency Center, tel.: 800-424-9300) under sponsorship of the Chemical Manufacturer's Association [31]** is available 24 hours a day and can provide basic chemical information if given the correct chemical or industrial name. More importantly, CHEMTREC can translate commercial product names into generic chemical names

*Information is also available directly from Mr. Bruce Marshall, Professional Education Coordinator, FEMA Emergency Management Institute, Emmittsburg, Maryland 21727, tel.: 301-447-6771.

**For more information contact Mr. Carl Wallis, Supervisor, Operations, Chemical Manufacturers Association, 2501 M Street NW, Washington, DC 20037, tel.: 202-887-1256.

for further information gathering, and they will contact the company that makes and owns the product involved. In many cases, the company will return the call to the local response team and provide assistance either verbally or through having a representative or a response team at the scene. CHEMTREC has a direct line to the NRC.

Equipment vendors are actively joining the response effort. Several safety equipment vendors have initiated 24-hours-a-day service. In one case, a vendor has offered to deliver equipment to the plane for long-distance responses. This is a benefit for response teams who, for instance, must maintain gas detection tube inventories of finite shelf life. Previously, a portion of a team's tube inventory would die on the shelf for lack of use. Around-the-clock access to detector tubes and other safety equipment allows local (and state and federal teams) to maintain lower inventories of tubes at lower cost, thereby making response more cost-effective and attainable.

Commercial databases are now on the market which are competitive with OHMTADS. These programs are cost-effective for local plans because they usually do not cost anything until the system is actually used (requiring an in-house terminal with phone modem). State and federal network contacts will have more information on these systems and their availability.

Finally, most individual facilities have formulated spill response plans. Corporations are beginning to consider response systems for transportation accidents involving their carriers. And because preplanning is of such value to the fire service, the fire service is promoting contingency plans at the industrial facilities, trucking terminals and other transportation terminals and routes in their districts.

Benefits of community planning efforts

In addition to the advantages of having a local plan, there are benefits from the planning effort itself. The planning process will improve the capability of local units to deal with the immediate needs for spill control and to seek assistance when needed. Interaction with other agencies at local, state, and federal levels and participation in training provided at the state and federal levels will promote incorporating new response and mitigation techniques into local capabilities.

The planning process will aid the fire department, traditionally charged with delivering public protection technology with rapid mobilization. The additional capability developed in the planning process will counter the complexity of chemical incidents to insure that the fire department mission for local protection continues to be met.

The ultimate success of our national awareness about the threat of chemical pollution in the environment is based on awareness at the level of the individual. Each person needs some understanding of the chemical products that support our way of life. The planning process will draw the public attention to these needs; it will introduce to the public and identify for the media

those people who can provide the knowledge for informed decisions about chemicals in the environment; and it will educate the public and invite their input and support on realistic methods for dealing with these problems.

References

- 1 National Oil and Hazardous Substances Pollution Contingency Plan, Fed. Reg., 47 (49) (March 12, 1982) 10972; Fed. Reg., 45 (55, part III) (March 19, 1980) 17850.
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