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REGION 6 LEPC UPDATE

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In this issue, we bring you methods for identifying hazards in your community, resources for worker protection, pipeline mapping, and a look at CAMEO in action. We have attached articles from PHMSA and EPA to help with your planning processes – Steve and Hilary

OSHA Releases New Resources to Better Protect Workers from Hazardous Chemicals Gatekeeper Newsletter Volume XIII, Edition 12 (December 1, 2013)

OSHA to the two ne

Each year in the US, thousands of workers are made sick or die from occupational exposures to the thousands of chemicals that are used in workplaces every day. OSHA recently launched two new web resources to assist companies with keeping their workers safe.

While many chemicals are suspected of being harmful, OSHA's exposure standards are out-of-date and inadequately protective for the small number of chemicals that are regulated in the workplace. The first resource OSHA has created is a toolkit (<u>http://www.osha.gov/dsg/safer_chemicals/index.html</u>) to identify safer chemicals that can be used in place of more hazardous ones. This toolkit walks employers and workers step-by-step through information, methods, tools, and guidance to either eliminate hazardous chemicals or make informed substitution decisions in the workplace by finding a safer chemical, material, product, or process.



"We know that the most efficient and effective way to protect workers from hazardous chemicals is by eliminating or replacing those chemicals with safer alternatives whenever possible," said Dr. David Michaels, assistant secretary of labor for occupational safety and health. OSHA also created another new web resource, the Annotated Permissible Exposure Limits (<u>https://www.osha.gov/dsg/annotated-pels/index.html</u>) or annotated PEL tables, which will enable employers to voluntarily adopt newer, more protective workplace exposure limits.

		*Go t	o Est of a	Il footnotes			
	CAE No.10	Regulatory Limits			Recommended Limits		
		OSHA PEL**		CM/05HA PEL/7 (ar of §28/22)	NIOSH REL = (10 of ((29/22)	ACGIN® 2013 TLV ⁶ ×	
Substance		pgan M3	mg/m ³	 hour TWA (SI) STIL (C) Ceiling 	Up to 10-hour TWA (ST) STEL (C) Colling	0 hour TWA (SI) STEL (C) Ceiling	
Acetaldetyde	75-02-9	290	360	(C) 25 ppm	Ca <u>Sex Accords A</u> ¹⁴⁷ Sex Accords C ¹⁴⁷	(C) 25 ppm	
Notific add	54-13-7	13	25	10 ppm (ST) 15 ppm (C) 40 ppm	13 ppm (ST) 15 ppm	10 ppm (ST) 15 ppm	

OSHA's PELs set mandatory limits on the amount or concentration of a substance in the air to protect workers against the effects of certain chemicals and OSHA will continue to enforce those mandatory PELs. Since OSHA's adoption of the majority of its PELs more than 40 years ago, new data, industrial experience, and developments in technology clearly indicate that in many instances these mandatory limits are not sufficiently protective of workers' health.

"There is no question that many of OSHA's chemical standards are not adequately protective," Michaels said. "I advise employers, who want to ensure that their workplaces are safe, to utilize the occupational exposure limits on these annotated tables, since simply complying with OSHA's antiquated PELs will not guarantee that workers will be safe."

The annotated PEL tables provide a side-by-side comparison of OSHA PELs for general industry to the California Division of Occupational Safety and Health PELs, National Institute for Occupational Safety and Health (NIOSH) recommended exposure limits (RELs), and American Conference of Governmental Industrial Hygienist (ACGIH) threshold limit values (TLVs). They offer an easily accessible reference source (<u>http://www.osha.gov/dsg/annotated-pels/index.html</u>) for up-to-date workplace exposure limits.

DOT Launches Free App Featuring 2012 Emergency Response Guidebook PHMSA.DOT.gov (January 2014)



DOT Launches Free App Featuring Emergency Response Guidebook Delivers Hazmat Safety Info into the Hands of Emergency Responders

WASHINGTON - The U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) today announced a free, mobile web app of its Emergency Response Guidebook 2012 (ERG). The new safety tool will provide the nation's emergency responders with fast, easily accessible information to help them manage hazardous material incidents.

The mobile ERG will make it easier for firefighters, police and other emergency first responders to quickly locate the information they need, thanks to an electronic word search function, and will ensure easy reading even during nighttime emergencies. The 2012 version of the ERG includes new evacuation tables for large toxic gas spills and standard response procedures for gas and liquid pipeline incidents.

"The first 30 minutes are the most crucial when it comes to responding to a hazmat situation," said U.S. Transportation Secretary Ray LaHood. "The new app is both mobile and flexible, and gives first responders the knowledge they need to protect themselves and their communities in an emergency."



PHMSA and the U.S. Department of Health and Human Services" National Library of Medicine (NLM) joined forces in producing the two free ERG mobile applications.



Links to download this software are available from the Apple iTunes website at ERG 2012 for iPhone and from the Google Play website at ERG 2012 for Android. In addition, a version of the ERG is available in NLM's Wireless Information System for Emergency Responders (WISER) application. An instructional video for learning how to use the ERG2012 is also available on PHMSA's website.

"This invaluable tool improves the speed and accessibility to hazardous materials response information to those on the front line of accidents and incidents," said PHMSA Administrator Cynthia Quarterman.

Chief Ernest Mitchell, the Federal Emergency Management Agency's U.S. Fire Administrator for the U.S. Fire Administration, noted that the release of the 2012 ERG mobile app "will provide essential tools to help first responders safely deal with hazmat incidents. I always found the ERG to be extremely valuable and believe that a copy should be in every emergency response vehicle and in the hand of every first responder in America."

The Pipeline and Hazardous Materials Safety Administration develops and enforces regulations for the safe, reliable, and environmentally sound operation of the nation's 2.5 million mile pipeline transportation system and the nearly 1 million daily shipments of hazardous materials by land, sea, and air. Please visit <u>http://phmsa.dot.gov</u> for more information.

Preparing Communities through All-hazards Planning and Analysis: Phase I – Identifying the Hazards



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About the Author: Bob Campbell has been preparing communities as a responder and consultant for the last 18 years. After founding ASG in 2005, he has overseen the development of all-hazards plans with emphasis on hazardous materials in over 60 communities. ASG has conducted over 2,000 hazardous material response exercises while supporting 760 locations world-wide. Bob leads ASG with a focus on capturing and sharing lessons learned, best practices and case studies to improve community preparedness. He is a contributing author in the recently released book "Handbook of Emergency Response: A Human Factors and Systems Engineering Approach."

In the October 2013 article, I outlined a proven model for how communities can conduct all-hazards planning using a comprehensive, risk-based method. This has been used in over 60 communities around the US ranging from small, rural areas to large metropolitan areas. Over the next year, I will be contributing a series of articles which provide additional technical details focused on each phase of the planning process as outlined below:

- Identifying the hazards,
- Assessing the risks,
- Risk Management, and
- Developing Emergency Response Procedures.

Prior to investing resources into developing a plan, it is important to define the scope of the plan and ensure that the scope encompasses all of the relevant threats and hazards for which the community needs to prepare. In some cases communities have limited the scope to highly probable events thereby omitting entire categories of hazards and low-probability, catastrophic events. Unfortunately, this method can skew the allocation of resources in such a way that the resources are not apportioned according to risks.

In order to remedy this common bias error in planning, communities should draw from the resources of a planning committee representing different perspectives. This committee should be charged with identifying the hazards and threats to a community to ensure a comprehensive scope. Given the theme of this publication, we will focus on technological hazards; however, in the next article we will discuss the risk assessment process which can be used to compare the risks of technological hazards with natural disasters to ensure proper resource allocation. Keep in mind that many resources can serve multiple purposes during response, not just addressing technological hazards.

There are several types and sources of technological hazards that could impact a community. The two main categories of sources are mobile and stationary sources. Mobile sources include transportation of hazardous materials over roads, rail, waterways, air and pipelines. Stationary sources include fixed plants, facilities, or storage tanks. Each of these hazards may be identified using the following approach.

Mobile Sources

The first step is to determine hazardous material cargo and transportation routes through the community. Data for each transportation route and commodity may be gathered from various sources. Conducting a commodity flow study may reveal some of this information but communities must first consider how they plan to use the data collected in order to design a valid study. The Guidebook for Conducting Local Hazardous Materials Commodity Flow Studies is an excellent reference produced by the Transportation Research Board of the National Academies.



This may be helpful in designing and conducting a reliable commodity flow study (<u>www.trb.org/main/blurbs/165775.aspx</u>). Unfortunately, some communities rush into conducting a commodity flow study without properly designing the study to support the decisions that they plan to make – namely, allocation of resources to hazardous material preparedness and response.

This can be a costly mistake as commodity flow studies cost approximately \$20,000-\$40,000, and the benefit gained in new hazard information does not likely change the outcome of how funds will be spent on hazardous material preparedness and response. The following paragraphs explain how to research and account for hazards from each mobile source.

Railroads: Determine which railroads transit the community using basic geographic information systems such as Google Earth or Mapquest. The owner of the railway may be identified by

zooming in on the map. Contact the railroad safety office to obtain the commodity flow data for your region. This is usually developed as an annual total and contains the quantity or frequency of each chemical commodity by car count. Figure 1 illustrates an example from BNSF.

Waterways: This is more difficult to assess; however, communities have had success in working with port authorities in collecting both quantitative and general qualitative data about specific commodities transiting ports. This method indirectly gathers information about the types of chemical commodities being transported on waterways and what commodities might be temporarily stored in the port.

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NUMBER	DESCRIPTION	CODE	COUNT	COUNT	MODAL	MODAL	COUNT	
4905711	LIQUEEED PETROLEUM GAS	21	1			0	0 0	0
4905752	LIQUEFIED PETROLEUM GAS	21	146	190	1	0	0 190	0
4905421	PETROLEUM GASES, LIQUEEED	21	1	1		0	0 4	5
4905781	PROPANE	21	1		1	0	0 0	D
4920523	CHLORINE	23	10	23	,	0	0 22	2
4910225	ALCOHOLIC BEVERAGES	3	0	14		0	0 14	4
4909152	ALCOHOLS: N.O.S.	3	432	673	1	0	0 673	3
4912015	FORMALDEHYDE- SOLUTIONS- FLAMMABLE	3	0	14		0	0 14	4
4908175	GASOLINE	3	52)	0	0 0	5
4908176	GASOLINE	3	1)	0	0 0	D
4909230	METHANOL	3	17	25		0	0 25	9
4910165	PETROLEUM CRUDE OIL	3	41	()	0	0 0	0
4910242	PETROLEUM DISTILLATES- N.O.S.	3	3	()	0	0 0	D
4908290	TETRAHYDROFURAN	3	0	4		0	0 4	6
4918311	AMMONUM NITRATE	5.1	0	(I		0	0 1	1
4931304	ACETIC ANHYDRIDE	8	0	1		0	0 1	1
4936362	AMMONIUM POLYSULFIDE- SOLUTION	8	1	()	0	0 0	D
4935248	CORROSIVE LIQUIDS- N.O.S.	8	2	()	0	0 0	0
4936653	CORROSIVE LIQUIDS: N.O.S.	8	2	()	0	0 0	D
4936654	CORROSIVE LIQUIDS- N.O.S.	8	1	()	0	0 0	D
4932342	FERRIC CHLORIDE- SOLUTION	8	21)	0	0 0	0
4932343	FERRIC CHLORIDE- SOLUTION	8	0	21		0	0 21	1
4932329	FERROUS CHLORIDE-SOLUTION	8	42	45	1	0	0 45	9
4930026	FLUOROSILICIC ACID	8	0	14		0	0 14	4
4930228	HYDROCHLORIC ACID	8	10	17	6 S	0	0 17	7
4935230	POTASSIUM HYDROXIDE- SOLUTION	8	0	1		0	0 1	1
4935240	SODIUM HYDROXIDE SOLUTION	8	24	44		0	0 44	4
4930040	SULFURIC ACID	8	8	11		0	0 11	1
4961605	ELEVATED TEMPERATURE LIQUID- N.O.S.	9	1138	1285	1	0	0 1285	9
4960107	ENVIRONMENTALLY HAZARDOUS SUBSTANCES- SOUD- N.O.S.	9	1	()	0	0 0	0
4914166	DIESEL FUEL	CL	5	()	0	0 0	D
4914164	FUEL OIL	CL	105	35)	0	0 35	9
4950110	FAK-HAZARDOUS MATERIALS	ML.	6	14		0	0 14	4
	TOTALS		2073	2453	1	0	0 2453	3

RESIDUE LOADED RESIDUE LOADED TOTAL

Figure 1: Example BNSF Railway Hazardous Materials Traffic Flow Summary Report



Airports: Air safety has significantly improved over the years and the likelihood of an incident resulting in a release of

> hazardous materials is extremely low but worth investigating. Contact the airport authority and port operations personnel to determine the types and quantities of hazardous cargo being delivered via aircraft. In many cases, this information is not tracked or catalogued by the airport authority and they lack visibility on much of the cargo shipped by private entities. Less than 1% of hazardous material incidents occur from aircraft incidents. Because of the small quantity of chemicals that can be transported on aircraft, these hazards will not pose a widespread risk to the general population. According to PHMSA over the last 5 years, there were only 3 casualties from among the general population; none were hospitalized for their exposure.

Pipelines: Transport of hazardous material via pipeline varies among communities. Communities that have pipelines typically transport petroleum, natural gas, and/or ammonia. Pipeline owners such as utility companies and manufactures may be able to provide maps of their pipelines to planners. Some of these are available through online mapping tools. Pipeline incidents accounted for 5% of all hazardous material incidents in 2012.

Highway: The U.S. Department of Transportation Federal Motor Carrier Safety Administration has a list of the current designated, preferred and restricted routes on the following website: http://www.fmcsa.dot.gov/safety-security/hazmat/national-hazmat-route.aspx. Review the PHMSA transportation statistics and commodity information at (http://www.phmsa.dot.gov/hazmat/library/data-stats).

This site includes national statistics, statewide statistics and local commodity flow studies, if available. Keep in mind that PHMSA estimates that 60% of commodities are not captured through commodity flow studies, so it is important to determine how this information will be used before engaging in commodity flow studies. Many communities have spent excessive funds to determine a poorly defined (at best) assessment of commodities which is a small part of the risk to the community.

Consider that the National Response Center reports approximately 30,000 incidents per year (adjusted for drills/exercises), 12,000 of which are from fixed sources including storage tanks. Whereas, there were approximately 4,500 reported incidents per year from mobile sources including rail cars and tanker trucks (65.5% of tanker incidents involved petroleum products).



Finally, there are approximately 1,000 pipeline incidents per year. The remaining incidents are comprised from water vessels, non-releases, platforms, etc. According to the Bureau of Transportation Statistics 2007 Commodity Flow Study, 54% of hazardous material tonnage is moved via trucks and 28% by pipeline. Of the 54% moved by trucks, Hazard Class 3 materials (primarily consisting of petroleum products) accounted for 53.8% of the total hazardous material ton-miles. The major hazard from mobile sources consists of petroleum products and paints.

Figure 2: Percentage of Incidents by Stationary and Mobile Sources (NRC, 2012)



Figure 2 illustrates the sources responsible for hazardous material incidents based on the NRC statistics sited above. While hazardous material incidents by truck represented the largest portion of mobile incidents, 65.5% of these nationwide incidents involved petroleum products leaving only 6.8% of all incidents comprising other hazardous materials, most of which are corrosives and oxidizers.

At this point, community planners will need to decide how much

effort and resources to put towards identifying the remaining 6.8% of hazards. Some portion of these hazards will be captured while identifying local, stationary sources while the remainder will represent inter-region commodities. These are all factors to consider when determining how much effort and resources to dedicate to a commodity flow study.

Intermodal Facilities: Many communities possess intermodal facilities for truck and rail cargo. These are not typically captured during commodity flow studies or when identifying stationary sources as there are no hazardous material reporting requirements for these facilities. In some cases these are empty lots with no employees present. One easy way to identify these sites is through the use of online aerial maps. Rail intermodals are often easier to identify with this method, but intermodals for trucks can appear much smaller. Also, local and/or state transportation officials or trucking associations can provide additional information on these smaller intermodals for trucks.

Stationary Sources

Stationary sources of hazards may include industrial facilities, storage tank farms, nuclear power plants, waste facilities, medical research facilities and companies that use radioactive materials.

Chemical Hazards: Stationary sources comprise 65.6% (NRC statistics, 2012) of hazardous material releases throughout the US. Typically, LEPCs collect Tier II reports from reporting facilities to identify hazardous materials. Unfortunately, Tier II reports alone are inadequate in providing a comprehensive picture of hazards in the community due primarily to the high reportable quantity of 10,000 lbs, unless the substance is deemed extremely hazardous.

Also, some facilities neglect to comply with the reporting requirements. Finally, there are several exclusions for gas stations, state-operated facilities (depending on state OSHA regulations), substances used in routine agricultural operations, substances used in research laboratories and hazardous wastes. Facilities that handle biological and radiological hazards are not required to participate in Tier II reporting. LEPCs may contact exempt facilities directly and request information on the hazardous materials stored on site. This may also be accomplished during a Fire Safety inspection from the Fire Marshall.

There are several ways to widen the search in order to identify hazards not reported on the Tier II report but each of these has limitations. EPCRA requires facilities to report specific hazardous chemicals over threshold quantities to the EPA and State Emergency Response Commission in the form of a Toxic Release Inventory (TRI) using Form Rs and Tier II reports. Planners can download the TRI information from the EPA Environfacts website http://www.epa.gov/enviro/facts/tri/search.html and obtain the Tier II reports from the LEPC.

Using the Form Rs coupled with the Tier II reports, communities gain some additional insight into hazardous materials stored at facilities and occasionally discover discrepancies/omissions of Tier II reports. There are several critical, limiting assumptions about the Form R which may exempt facilities from reporting: (1) applicable NAICS code (note that local government with NAICS codes under public administration are excluded along with airports); (2) the chemical must be on the list and above the reportable quantity (which is typically 10,000 pounds from many chemicals); and (3) the facility must have 20,000 man-hours of employees per year (i.e., about 10 employees).

Additionally, planners may search other EPA permit-required reports such as the Clean Air Act Risk Management Program (RMP), Clean Water Act NPDES permits which provide some indication of hazards discharged to waterways, Resource Conservation and Recovery Act (RCRA) which provides indication of hazardous wastes permitted at facilities (these products can be different from raw materials). Using EPA's EnviroMapper



Figure 2: EPA's EnviroMapper

(<u>http://www.epa.gov/emefdata/em4ef.home</u>), planners can identify hazards by media as well as focus searches to industries and chemicals used.

Figure 3 provides an illustration of the air emission permits in Albuquerque, NM. This tool has been helpful in identifying many of the hazards not reported through Tier II reporting. Finally, ensure that hazardous waste storage facilities are identified using this tool as they are exempt from Tier II reporting. These facilities may pose a unique risk and challenge based on the variety of hazards stored on site and the change of materials stored on site throughout the year. Lesson learned from the EQ plan in Apex, NC identified that responders were unaware of the hazards

stored on site. Even after the facility manager was contacted, they were unable to accurately identify the waste materials stored on site, as the facility (and inventory) was on fire.

Radiological Hazards: In additional to chemical hazards, radiological hazards such as radioactive materials, nuclear power plants, and reactors may pose a risk to communities. The U.S. Nuclear Regulatory Commission (NRC) provides resources for finding nuclear facilities near the community through the facility locator section of its website, http://www.nrc.gov/info-finder.html. Planners may want to identify all facilities within 250 miles of the community. Experience has shown that facilities within 250 miles have the potential to impact a community with contamination and exposure potential (although not a health hazard at that distance, recall the global impact of Chernobyl and Fukushima) depending on the type of reactor and weather conditions.

Second, Emergency Managers should submit a request to the NRC and/or the Agreement State Director to obtain radioactive material license information for their county. Agreement states have been authorized to license materials within their state in lieu of the NRC. A list of Directors and Liaison Officers for agreement states is located on the NRC website, <u>http://nrc-stp.ornl.gov/asdirectory.html</u>. While most radioactive materials stored within a community are sealed or medical sources with a relatively low activity, the potential for exposure from building fires exist; therefore, first responders should be aware of the existence of this hazard so that they can adequately monitor their exposure and protect themselves.

Summary

A solid hazardous material response plan begins with identifying the hazards. This will ensure that responders are resourced properly. This article provided several sources of data and methods that may be useful in identifying mobile and stationary hazards. Tools such as EnviroMapper can facilitate report writing by downloading hazard data into tables



and mapping files.

The mapping features may also assist planners in pinpointing concentrations of hazardous material facilities and proximity to sensitive populations such as hospitals and schools.

It's important to capture all of the hazards identified for the community hazardous material response plan. This information should be shared with hazardous material response teams to ensure they have access to the right protective equipment, respirator and cartridges, detection equipment and training in order to respond to these incidents. Since many rural hazardous material responders will be relying on regional or state response teams, they should communicate the hazards identified to the teams that may be called upon during these incidents.



Finally, hazards released into the environment will not stay within political boundaries, so it is important to share this information with surrounding counties. Next quarter, we will delve deeper into the risk assessment process.

Emergency Response Numbers

Arkansas Dept. of Emergency Management	800-322-4012
Louisiana State Police	877-925-6595
New Mexico State Police	505-827-9126
Oklahoma Dept. of Environmental Quality	800-522-0206
Texas Environmental Hotline	800-832-8224
National Response Center	800-424-8802
EPA Region 6	866-372-7745
CHEMTREC	800-424-9300

National Pipeline Mapping System(NPMS) Pipeline Information Management Mapping Application An Online Pipeline Mapping Tool from PHMSA PHMSA.DOT.gov (January 2014)

The National Pipeline Mapping System (NPMS) is a geographic information system (GIS) created by the <u>U.S. Department</u> of <u>Transportation</u>, <u>Pipeline and Hazardous Materials Safety Administration</u> (PHMSA), <u>Office of Pipeline Safety</u> (OPS) in



cooperation with other federal and state governmental agencies and the pipeline industry. The NPMS consists of geospatial data, attribute data, public contact information, and metadata pertaining to the interstate and intrastate hazardous liquid trunklines and hazardous liquid low-stress lines as well as gas transmission pipelines, liquefied natural gas (LNG) plants, and hazardous liquid breakout tanks jurisdictional to PHMSA. Attributes in the NPMS pipeline data layer include:

- PHMSA-assigned operator identification number
- Operator name
- System name
- Subsystem name
- Diameter (voluntary data element)
- General commodities transported
- Interstate/intrastate designation
- Operating status (in service, abandoned, retired)
- Geospatial accuracy estimate





PIMMA (Pipeline Information Management Mapping Application) is the application which allows users to access NMPS data. It allows users to view location and attribute information for pipelines in their jurisdictions and create pdf maps for printing, as well as breakout tank (BOT) and liquefied natural gas plant (LNG) data.

Federal, state, and local government officials should apply for PIMMA access through the NPMS website by following the yellow link that reads "Click Here to Apply for PIMMA Access."

After an employment verification process of 5-7 business days, the NPMS staff will deliver a username via email, and a password via U.S. Mail.

The nominal accuracy of geospatial data in the NPMS is +/-500 feet. Therefore, the NPMS should never be used as a substitute for contacting a one-call center before excavating.

State EPCRA / LEPC Coordinators					
Arkansas	Kenny Harmon	501-683-6700	kenny.harmon@adem.arkansas.gov		
Louisiana	Gene Dunegan	225-925-6113	gene.dunegan@dps.la.gov		
New Mexico	Daniela Bowman	505-476-0617	daniela.bowman@state.nm.us		
Oklahoma	Tom Bergman	405-702-1013	tom.bergman@deq.ok.gov		
	Bonnie McKelvey	405-521-2481	bonnie.mckelvey@oem.ok.gov		
Texas	Bernardine Zimmerman	800-452-2791	Bernardine.zimmerman@dshs.state.tx.us		
	Chase Yarbrough	512-424-2447	<u>chase.yarbrough@dps.texas.gov</u>		



CAMEO Update:

Abita Springs Fire District Installs Laptops in all First Response Vehicles Heather Nolan, NOLA.com | The Times-Picayune (January 2014)

St. Tammany Fire District No. 8 recently installed laptops in all of its first response vehicles, and is the first fire district in the parish to use software designed by two federal agencies to assist in emergency planning and response, Chief Earl B. Gorrondona said.

The Abita Springs area fire district is using software called CAMEO (Computer Aided Management of Emergency of Emergency Operations), designed by the Environmental Protection Agency and the National Oceanic and Atmospheric Administration Agency, Gorrondona said.

The software includes four programs. Gorrondona said those programs are:

- CAMEOfm: a program that includes databases of special locations, hydrants, resources, facilities, contacts, routes and chemicals in inventory. Gorrondona said Fire District No. 8 has created digital versions of its pre-plans that allow firefighters to quickly access information on buildings, including hours of operation, floor plans, aerial photographs, images of the interior and exterior of structures and locations of the closest water supplies.
- MARPLOT: a mapping program that allows firefighters to quickly view and modify maps, and create objects to record real-time firefighting operations.
- CAMEO Chemicals: a program that contains a library of more than 5,400 datasheets with response-related information and recommendations for hazardous materials that are commonly transported, used or stored in the United States.
- ALOHA: a program that estimates the threat zones associated with hazardous chemical releases--including toxic gas clouds, fire and explosions. ALOHA stands for



explosions. ALOHA stands for Areal Locations of Hazardous Atmospheres.



Interested in applying CAMEO as a response and planning tool in your jurisdiction?

Visit <u>http://www2.epa.gov/cameo</u> to learn all the insand-outs of CAMEO, download the software, and find CAMEO trainers in your area.

CAMEO instruction from LSU is available to agencies at no direct cost. To view details, enrollment minimums, and facility requirements, visit http://www.ncbrt.lsu.edu/.

CAMEO Trainers in Region 6 Include:

- Tom Bergman (OK) <u>tom.bergman@deq.state.ok.us</u>
 Steven Hutson (OK)
- steven.hutson@hazmatoklahoma.com
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