Community Member Preparedness for Potential Fuel Releases along Transportation Routes

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Midwest Consortium for Hazardous Waste Worker Training

Acknowledgments

The Midwest Consortium developed this introduction to health and safety impacts of high-volume transportation of fuels to assist the local community members and business owners in becoming better prepared for possible releases along transportation routes. This work was done under cooperative agreement number U45 ES 06184 from the National Institute of Environmental Health Sciences. Several member institutions of the Midwest Consortium contributed to the development of this program. We gratefully acknowledge review comments from Gary Quick of the International Brotherhood of Teamsters, IBT Worker Training Program that strengthened the program and the support of the concept of this program from Jim Tate of BioUrga. We also thank members of CARS in Minneapolis for providing photos.

See http://med.uc.edu/eh/academics/training/mwc for a listing of contacts at each member institution and additional information. We encourage you to comment on these materials. Please give your suggestions to those teaching the program in which you are now enrolled, or forward them to the Midwest Consortium for Hazardous Waste Worker Training, University of Cincinnati, P.O. Box 670056, Cincinnati, Ohio 45267-0056 or click on 'contact us' at http://med.uc.edu/eh/academics/training/mwc.

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The material was prepared for use by experienced instructors who are providing an introduction to health and safety considerations resulting from energy transportation. Users are cautioned that the subject is constantly evolving. Therefore, the material may require additions, deletions, or modifications to incorporate the effects of that evolution occurring after the date of this material preparation.

This training does not substitute for local training on alerting systems, evacuation routes or other actions that might be required during an unplanned release.

All web links are active as of July 5, 2017; if you find an error, please inform the facilitator so that it can be updated.

Disclaimer

The Occupational Safety and Health Administration (OSHA) rule to help ensure worker health and safety during emergency responses requires introductory awareness training on basic hazard recognition and alerting, operations-level training for those who will control the spread of the hazard, away from the point of emission and technician level training for those who will work at the point of emission to stop the release. Additional categories of training are described for the Incident Commander and Specialist. See 29CFR1910.120.120(q) for complete details for emergency responders in industry and for municipal organizations.

Instead of the responders covered by OSHA, this program serves the introductory needs of residents in areas where fuels are transported in high volume in order to begin the training needed if a release occurs. This training aligns with local government and company programming for residents and business owners in the area who may discover a release or be asked to shelter-in-place or evacuate.

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Introduction

This training is designed for business owners and community members who may be impacted by a large-scale release of fuels during transport by rail, pipeline or over the road. This program is an introduction to identifying risks in the community and initiating planning to reduce damage to life and property.

During this program you will learn about the following:

- Fuel transport routes in or near your community
- Hazards of fuel releases
- Response activities and actions during a release
- Structure of the emergency response teams
- Consequences of delaying preparation for the unlikely

When you finish this introduction you will be better able to do the following:

- ➢ Recognize where a release might occur
- ➢ List outcomes of a release in your community

As noted by Wall Street Journal reporters in 2015:

All modes of oil transportation:

Pipeline, Rail, Water, Truck

Have risks of spill and can be improved…

https://www.wsj.com/articles/how-to-transport-oil-more-safely-1442197722. (accessed January 7, 2016)

A review of transportation routes is provided in the next few pages:

Methods of transportation and routes: Major transportation routes for oil and other high-volume fuels run through the Midwest.

The rail system links Canada and the United States as shown in Figures 1 and 2, below:

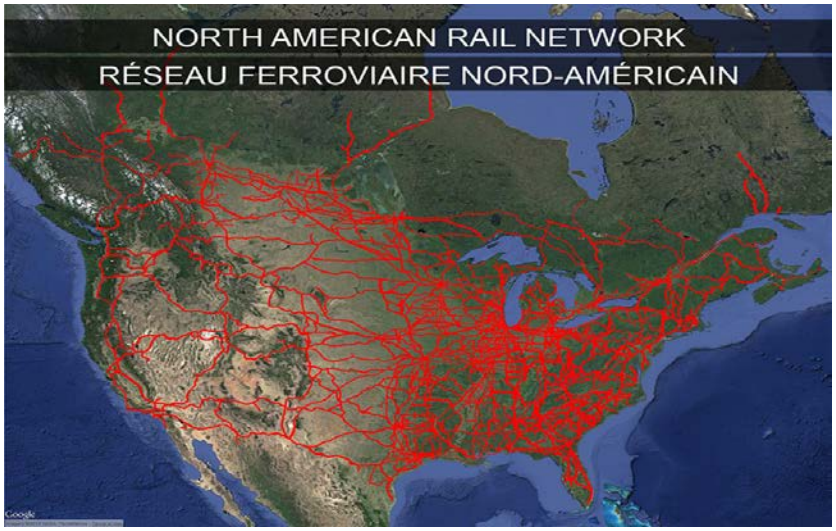
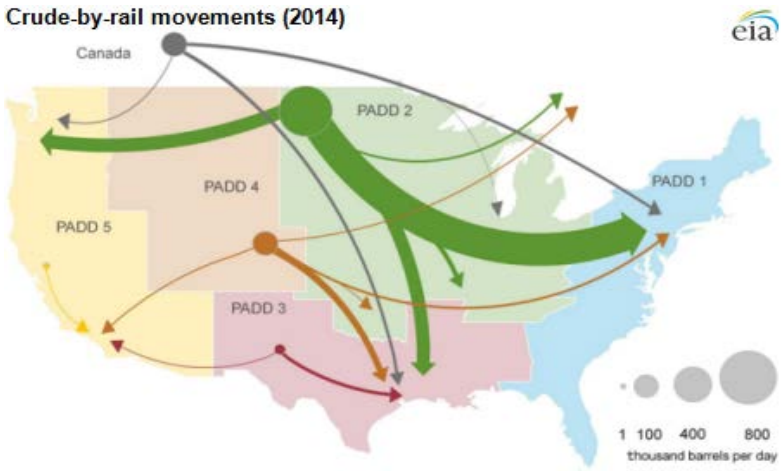


Figure 1. Source:http://www.bst-tsb.gc.ca/eng/rapports-reports/rail/2013/r13d0054/r13d0054.asp. Accessed Jan 4, 2107.

Figure 2. Crude oil is moved by rail from Canada through the Midwest, and from the Midwest to the east, west and Gulf coasts.



Source: U.S. Energy Information Administration, from data from the Surface Transportation Board and other information
Note: Crude-by-rail movements greater than 1,000 barrels per day are represented on the map; short-distance movements between rail yards within a region are excluded. PADD denotes Petroleum Administration for Defense District. (Accessed January 7, 2017).

Additional maps can be created here: http://www.eia.gov/state/maps.cfm?v=Petroleum.

Pipelines crisscross the Midwest, as shown in Figure 3, below:

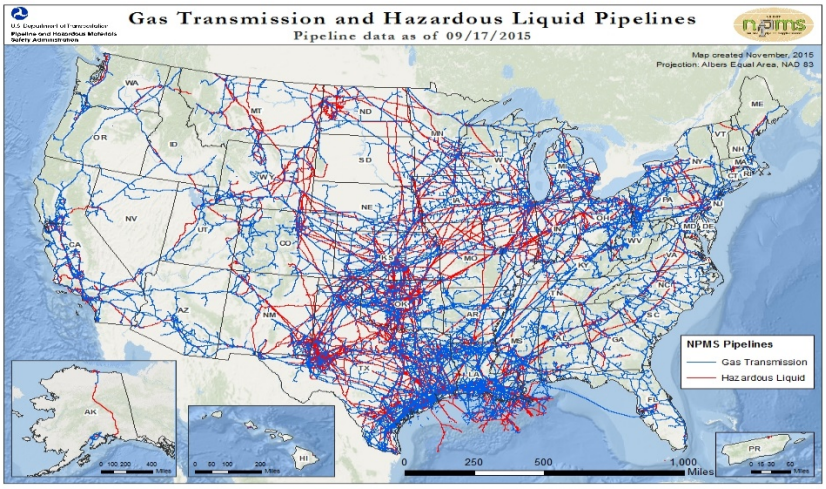
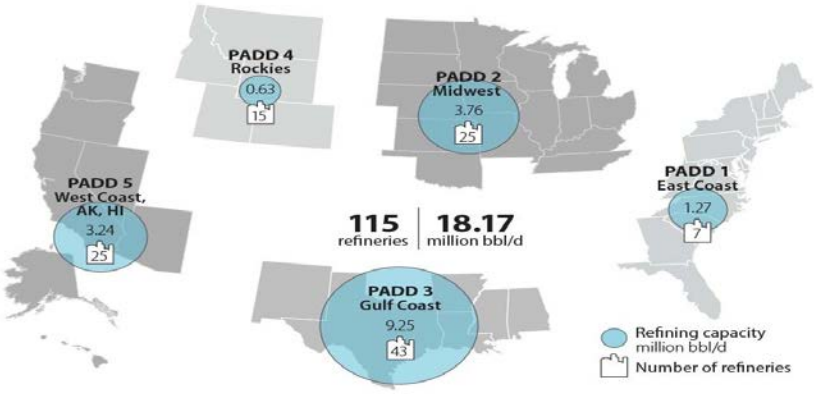


Figure 3. Pipeline graphic. Red is hazardous liquid lines as of September 2015. Source: https://en.wikipedia.org/wiki/Pipeline_and_Hazardous_Materials_Safety_Administration. Accessed Jan 4, 2017.

Crude is also moved by pipeline from the Gulf Coast (PADD 3, Petroleum Administration for Defense District) into the Midwest (PADD 2), as shown in Figure 4. See https://www.eia.gov/dnav/pet/pet_move_pipe_dc_R30-R20_mbbl_m.htm for monthly movement reports. High Midwest production and low refining capacity requires transport of crude out of the region.

Figure 4. U.S. Refinery Capacity by PADD in 2012 (Congressional Research Service; Energy Information Administration https://fas.org/sgp/crs/misc/R43390.pdf accessed January 4, 2017)



What can happen during storage, transfer or transport?

Usually nothing happens…**BUT**

Impacts of releases

Sometimes releases occur that threaten life or property.

Example: Casselton, ND. Fire after train derailment.

See https://app.ntsb.gov/investigations/2013/casselton_nd/casselton_nd.html; photo credit Ken Pawluk / Associated Press / December 30, 2013 / latimes.com. Accessed February 15, 2017.

The following are remarks made by Dave Rogness, emergency manager of Cass County North Dakota, to the Regional Interagency Steering Committee meeting about the 2013 Casselton train derailment, discussing one derailment with release of fuel. https://www.fema.gov/challenges-faced-during-2013-casselton-train-derailment. Accessed Jan 5, 2017

The Casselton explosion was just one example of the hazards that can result from oil-car derailments.

Chemical hazards, Rogness pointed out, include asphyxiation from hydrogen sulfide, cancer from benzene and the typical house-fire hazards of carbon monoxide, sulfur oxides, nitrogen oxides and smoke particles.

The explosion alone can also be devastating. He pointed to the example of the fireball of Bakken crude oil in Lac Megantic, Quebec, in July of 2013 that left 47 dead and 30 buildings

destroyed. Blazing oil flowed over the ground, drained into storms sewers, and erupted as huge fires from other drains, manholes, and even chimneys and basements of other buildings.

How real is the threat? The U.S. Department of Transportation predicts more than 200 crude and ethanol trains will derail over the next 20 years, including 10 in urban areas, Rogness said. At least one of those urban derailments could be catastrophic.

Example: Community fire in Quebec

Freight train burning in middle of town, Lac-Megantic, Quebec, Canada
Source: **http://www.bst-tsb.gc.ca/eng/enquetes-investigations/rail/2013/r13d0054/r13d0054.asp**. Accessed Jan 4, 2016

Example: smoke plume from fire following train derailment in Galena IL drifts close to residence

03-06-2015 at Galena, IL. Source: https://www.epa.gov/il/galena-train-derailment, Accessed February 9, 2017)

Example: Release of oil to water in Michigan

Booms on the Kalamazoo River to contain oil from Canada released from pipeline. Source: https://www.epa.gov/enbridge-spill-michigan. Accessed Jan 4, 2017.

Example: Release to water in North Dakota

Oil visible on the surface of the water following Belle Fourche Pipeline leak, ND, Dec. 2016 Source: https://www.flickr.com/photos/145935260@N04/30765473074/in/album-72157677768444415/. Accessed Jan 5, 2017

The following fuels are included in this program:

Bakken crude—a light crude
Canadian and Gulf coast crude—generally heavier crudes
Ethanol fuels—E100 (100% ethanol) and lower proportions mixed with gasoline (E10, E85, gasohol <10%)

Diesel fuel and natural gas are not included; however, the tools illustrated in this program can be applied to other fuels.

Examples of Midwest releases:

North Dakota:

Near Casselton, 18 Bakken crude oil cars derailed
December 30, 2013
476,000 gallons spilled and ignited
Voluntary evacuation of the town of 2,400

Near Tioga, pipeline breach
September 2013
Farmer harvesting wheat noticed sheen on soft ground
865,200 gallons (20,600 barrels) released
23 acres of farmland required remediation

Wisconsin

Near Elena, 25 of 112 cars derailed including some carrying ethanol
November 1
Five cars leaked, releasing 18,000 gallons of ethanol to the Mississippi
75 people evacuated; road closure

Illinois

Near Galena, 21 of 105 cars derailed; six contained Bakken crude
March 5, 2015
Two burst into flames
Evacuation for 1 mile

Exercise – Video Review and Discussion

Your facilitator will show a video of an event that occurred in the Midwest.

Discuss the following:

Is a fuel-related event possible in your community?

What are some outcomes of an event?

Is the community ready?

Are you ready?

This program is designed to facilitate increasing your preparedness as you live and do business where fuel transportation releases may occur.

Hazard Recognition

The increasing volume of fuels transported by surface, rail and pipeline has focused community residents on the potential for a large-scale release and the need to plan in order to be prepared.

Section Objectives

When you complete this section, you will be better able to:

- Recognize hazards and terms associated with fuels and fuel releases
- Recognize specific hazards associated with ethanol, Bakken crude and petroleum oil
- List potential hazards of fuels that may be transported through your community

Introduction

This program covers ethanol (ethyl alcohol) and blends with gasoline, Bakken crude and petroleum crude from Canada and the Gulf Coast.

Background and terminology for each type of fuel, sources of information regarding fuels transported through your community and a structure for organizing a hazard assessment are presented in this section.

Background and terminology

Ethanol

In 2016, the nation-wide 14.1million gallon capacity to produce ethanol for fuel was centered in the Midwest (Renewable Fuels Association, 2016 RFA Ethanol Industry Outlook, http://www.ethanolrfa.org/pages/annual-industry-outlook, accessed February 7, 2017). To map these production facilities, see: https://maps.nrel.gov/biofuels-atlas/. Ethanol is usually transported by rail or barge (pipeline transport requires a dedicated line as it absorbs water and impurities normally present in pipelines). Each DOT-111 rail car has a capacity of 30,100 gallons, and could be moving in unit trains of up to 100 of these tank cars.

Formulations are designated by the letter 'E' followed by a number reflecting the ethanol content

E100	ethanol or ethyl alcohol or neat ethanol
E95-E99	denatured ethanol, contains 95-99% ethanol with remainder gasoline
E11-E99	more than 10% ethanol, named as: ethanol and gasoline mixture ethanol and motor spirit mixture gasoline and ethanol mixture petrol and ethanol mixture
E1-E10	gasohol, 10% or less ethanol with larger component gasoline

Blends are the primary fuel transported in large volume.

Hazard considerations

- Neat ethanol workplace exposure limits, enforced by the Occupational Safety and Health Administration (OSHA):
    - 1000 ppm for an 8-hour work day
    - IDLH is 3300 ppm (concentration Immediately Dangerous to Life and Health)
- Flammable solvent that mixes completely with water (miscible).
- Ethanol vapor is heavier than air, and can collect in low areas and reach explosive concentrations in areas with little mixing (examples: pipes, sewers, trenches—may be referred to as confined spaces)
- Flashpoint (lowest temperature at which vapors will ignite)
    increases as it is diluted with water; still flammable at 20% strength
    decreases with addition of gasoline (E100, 55^{o}F; E95, -5^{o}F; E85, -20^{o}F)
- Fuel blends contain gasoline-related compounds (BTEX—benzene, toluene, ethyl, benzene, xylene)
- Anaerobic biodegradation of ethanol in soils results in methane (weeks after spill), but could build up in confined space

Bakken crude

2016 production generally exceeded 1M barrels per day and gas production exceeded 1.5B cubic feet per day
(https://www.eia.gov/petroleum/drilling/pdf/bakken.pdf, accessed January 7, 2017)

In 2014, about 40% of the natural gas was flared or lost
(http://www.eia.gov/todayinenergy/detail.php?id=15511, accessed January 7, 2017)

Hazard considerations

Often referred to as a ‘light’ crude
Highly flammable (more than heavy crude. See
http://www.sightline.org/2014/01/21/why-bakken-oil-explodes/)

Contains BTEX (Benzene, Toluene, Ethyl benzene, Xylene)

Petroleum crude from Canada or the Gulf Coast

In 2016, crude moved into the Midwest (828,000 to 868,000 barrels per month) and through the northern Midwest to New England (range 130,000 to 1.2M barrels per month) from Canada. (http://www.eia.gov/dnav/pet/PET_MOVE_RAILNA_A_EPC0_RAIL_MBBL_M.htm, accessed January 7, 2017).

In November 2016, just over 27M barrels flowed north each month from the Gulf through pipelines (https://www.eia.gov/dnav/pet/pet_move_pipe_dc_R30-R20_mbbl_m.htm, accessed January 7, 2017).

Hazard considerations

- Often referred to as a 'heavy' crude
- Wildlife hazard ('tar-like' components do not degrade rapidly birds are often cleaned of oil by trained volunteers)
- Contains BTEX

Identifying the potential for releases in your community starts with listing what is transported (by surface, rail, pipeline) through or near your community.

Information Sources

For each of the fuels and the constituents of fuels, a Safety Data Sheet (SDS) can be found on the internet by searching for the term. For example a search for 'E85 SDS' returned examples from a range of suppliers.

Shippers and the managers of oil storage locations must have an Emergency Response Action Plan (ERAP) that includes detailed descriptions of each hazardous substance and the actions needed in a range of release scenarios that could be anticipated, including a 'worst case' scenario.

Managers at facilities processing fuels comply with a number of federal regulations that require descriptions of the fuels as part of required plans, including:

- Spill Prevention, Control and Countermeasures Plan (SPCC)
  - Required by Section 311 of the Clean Water Act to prevent discharge to navigable water or shoreline (EPA)
  - For storage of more than 1320 gallons (surface) or 42000 gallons (underground)

Oil Spill Prevention and Response Plan (SRP)
- Required by 49CFR130 (DOT)
- Includes a 'worst case' during discharge during transportation
- Includes bulk packaging (tank trucks, railroad tanks, portable tanks)
- Compliance triggered by quantities

Risk Management Program (RPM)
- Required by section 112(r) of the Clean Air Act (EPA)
- Compliance triggered by threshold quantities

Process Safety Management (PSM) Program
- Required by 29CFR1910.119 (OSHA)
- Compliance triggered by threshold quantities

Emergency Action Plan (EAP)
- Required by 29CFR1910.38 (OSHA)
- Compliance triggered by decision to evacuate if a release occurs

Emergency Response Plan (ERP)
- Required by 29CFR1910.120(q) (OSHA)
- Compliance triggered by decision to respond if a release occurs

Facility Response Plan (FRP)
- Required by Oil Pollution Act if 1990; Section 311 Clean Water Act (EPA)
- Includes a 'worst case' discharge

Storm Water Pollution Prevention Plan (SWPPP)
- Required by Section 402(p) of the Clean Water Act (EPA)
- Compliance triggered by EPA category of activity (40CFR122.26)

Employees, responders and residents/land owners are alerted to fuels in the community as a result of several types of required facility drills and exercises included in the ERAP:

Facility response drills (FRPs) conducted at least annually
Qualified Individual notification drill conducted at least quarterly
Tabletop exercise for Spill Management Team conducted at least annually
Equipment Deployment exercise conducted at least semi-annually
Unannounced spill response exercise conducted at least annually
External exercise with community partners at least every three years

Signage and direct observation provide clues to hazards.

For example, postings at entrance gates alert everyone to hazards.

Midwest Consortium photo taken from public road in New Town, ND. November 2016.

Required pipeline posting, with contact information. These are in the area of a pipeline, but do not identify exact location. Midwest Consortium photos taken from public roadway, New Town, ND. March 2017.

Large storage tanks and rail cars at loading facility near a body of water.
Midwest Consortium photo taken from public road in New Town, ND. March 2017.

Rail cars in Minneapolis, showing nearby residences, businesses and the downtown area.
Photo courtesy of CARS, Minneapolis MN

Closer observation from public access ways provides more information:

Close up of rail car placard. Use DOT ERG to identify contents. Midwest Consortium photo taken from public road in New Town, ND. November 2016.

Department of Transportation (DOT) placard identifiers:

Ethanol (placard indicates %)

Ethanol (neat)	1170
Denatured ethanol (95-99% ethanol)	1987
Ethanol and gasoline (>10% ethanol)	3479
Gasohol (1-10% ethanol)	1203

Bakken crude	1267
Petroleum crude	1267

For rail cars, DOT regulations require placarding of all four sides of the tank car.

More information on the placard 'short hand' and how to use the Department of Transportation Emergency Response Guidebook (ERG) are found here: http://www.phmsa.dot.gov/hazmat/outreach-training/erg

Hazards of Releases

Spills move

As liquids, any released fuel will filter into land and flow to the lowest surface. Surface water can be contaminated directly by the spill; leaching may contaminate groundwater.

Storage tanks and pipelines that are underground can breach, and the liquid may be identified on the surface. See reports and photos here: http://countercurrentnews.com/2016/11/massive-oil-pipeline-leak-north-dakota-farmers-fields-proves-dapl-pipeline-cannot-safe/ and http://www.cbsnews.com/news/massive-oil-pipeline-break-under-nd-farmers-wheat-field/.

Fires and Explosion

In some releases, the fire is immediate as at Casselton, ND. The fire can spread; fire and heat can pose explosion hazards depending on materials near the release.

Stay away from any released fuel

Exercise—Hazard Assessment

Describe one or more exposure scenario for your community (how transported, location, what caused release). List the fuel released, who would be affected and what might be done to reduce risk of a release.

Describe Incident Scenario	Fuel Released	Populations affected	To reduce risk of release I would….

Health Hazard Recognition

Anyone who may be in the area of a large-scale release needs to be aware of potential hazards to their health, if exposed. Exposure to the fuels or particles during fires can result in a response.

Section Objectives

When you complete this chapter, you will be better able to:

- List potential exposures from each fuel
- Identify health effects of possible exposures

Introduction

Hazardous components and routes of human exposure are listed in the table below for the fuels of interest.

First, some background on the terms used in the Table.

VOCs (Volatile Organic Compounds) is a term that includes organic compounds (chemicals that contain carbon) that easily become vapors or gases in the air. Vapors at a gas station are VOCs, for example. The fuels included in this program contain organic compounds that will go into the air when outside of a tank, rail car or pipeline—they are volatile.

BTEX is short-hand for Benzene, Toluene, Ethyl benzene and Xylenes. Each of these chemical is a VOC, but these are identified as a group because they are similar in chemical structure and are associated with some of the more important health effects.

There are two primary routes of exposure if fuels are released:

Inhalation, or breathing in the vapors of the fuels. If you smell it, you are breathing it; but not smelling is it does not mean you are not exposed. The sense of smell is an unreliable clue to what is in the air. People have different levels of sense of smell, and everyone's ability to smell can be affected by illnesses such as a cold or allergy.

Dermal, or getting the fuel on the skin. There can be a direct effect on the skin such as irritation or defatting by some fuel components. The tar-like part of heavy crude does not go into the air, and stays in contact with the skin for a longer period of time. In addition, some components of the fuels may go through the skin, and enter the blood stream. In the blood stream, the chemical can reach other parts of the body where it may do harm.

Fuel	Representative hazardous components	Route(s) of Exposure
Crude oil (Canada, Gulf coast)	VOCs* BTEX** Oil	Inhalation Inhalation, Dermal Dermal
Crude oil (Bakken)	VOCs BTEX Hydrogen sulfide	Inhalation Inhalation, Dermal Inhalation
Ethanol (E100)	Ethanol	Inhalation, Dermal
Ethanol (E10-99)	Ethanol BTEX	Inhalation, Dermal Inhalation, Dermal

*VOCs Volatile Organic Compounds
**BTEX Benzene-Toluene-Ethyl benzene-Xylene

Potential health effects of fuel components

The SDSs introduced in Hazard Recognition include some information of health effects. Other additional resources are described here.

New Jersey Fact Sheets (accessed here: https://web.doh.state.nj.us/rtkhsfs/factsheets.aspx) include information on each of the components of BTEX, hydrogen sulfide and ethanol (see ethyl alcohol). Hydrogen sulfide has a 'rotten egg' smell and is particularly dangerous—exposure can kill in minutes.

> Smell rotten eggs? Then soon there is no odor of rotten eggs?
>
> **BEWARE—hydrogen sulfide can overwhelm the ability to smell it**
>
> At first whiff—move away immediately and alert emergency personnel

Health effects of light crude are shown here: https://www.cdc.gov/nceh/oil_spill/docs/Light_Crude_Oil_and_Your_Health.pdf.

Tox Town (https://toxtown.nlm.nih.gov/text_version/chemicals.php) includes health effects of crude oil and VOCs.

A large release could result in a plume of airborne vapors. Some of the components of fuels above, such as Benzene, are listed by the Environmental Protection Agency as a hazardous air pollutant. For each hazardous air pollutant, a lifetime reference concentration (RfC) has been modeled for a specific health outcome. These values are much lower than occupational guidelines, as each has been developed to protect against an effect over a longer period of time and includes children and older adults. For example, the OSHA limit for benzene is 1 part per million (ppm); the RfC for benzene is .0094 ppm, more than 100 times lower. The OSHA limit is developed for workers exposed 8 hours per day, 40 hours a week for a working lifetime (up to retirement); in contrast, the EPA RfC is developed to protect over a lifetime, and includes consideration of changes in characteristics from birth to older age.

NOTE: some concentrations may be reported in milligrams per cubic meter (mg/m^3). To convert mg/m^3 to ppm, use this calculator:
https://www.cdc.gov/niosh/docs/2004-101/calc.html.

Information on each of the hazardous air pollutants is shown here: https://www.epa.gov/haps/health-effects-notebook-hazardous-air-pollutants. There is no general air standard for VOCs.

General guidance actions to take when there is a potential hazard of from a chemical release is shown here: http://www.lung.org/our-initiatives/healthy-air/outdoor/emergencies-and-natural-disasters/chemical-releases.html.

Potential effects of particles from a fuel fire

If a fire results, particles may be an inhalation hazard. If there is a possible exposure to 'a cloud of smoke' from burning fuel, you will be alerted to take specific actions by emergency responders.

If you experience symptoms of particle or fuels exposure…. tell your health care provider the circumstances of the exposure.

Actions and Activities during a Release

Appropriate notification and coordination of the actions and movement of residents will enable responders to do their jobs and minimize loss of life and property.

Based on experience, train derailments or pipeline ruptures involving fuels is now considered ‘predictable’ and responders and community members should work together to prepare. Preparation will help ensure that those in the community know what to do, follow directions and allow the responders to focus attention on the release. Responders following a detailed and structured plan for an event could be hampered by untrained citizens watching or trying to help when not directed to do so. And injuries may result.

The response to a large-scale release may be followed by days or weeks of remediation effort and a longer time period for rebuilding at the community level. We may not be able to prepare ourselves for every kind of emergency, but following a basic emergency response procedure will reduce the degree of confusion and uncertainty that could occur if a release occurs along the transportation routes.

Section Objectives

When you complete this section you will be better able to:

- Describe the need for an alerting system for residents
- List reasons for an organized response command structure
- Describe the need for an evacuation plan for residents

Introduction

The response activities are designed to protect the community; planning for a release utilizes the resources of the community.

What is at risk during a release?

- Human health and safety
- Government or municipal services including
    - Power
    - Hospital/health care
    - Fire
    - EMS
    - Police
    - Water supply and water treatment
    - Transportation access
    - Communication
- Commercial establishments and businesses
- Personal property (including housing, outbuildings, equipment, livestock, pets)
- Environment (air, water, land)

NOTE: Water and land damage may affect residential needs, recreation, livestock

What are the community resources?

Pre-emergency planning and coordination with outside parties

Included in this planning will be organizations such as:

- Local fire and police services
- Emergency medical service
- Hospital or medical clinic
- Local Emergency Planning Committee (LEPC)
- Clean-up contractor(s)
- Local, state and federal environmental and emergency agencies
- Community—businesses and residents
- Municipal/commercial carriers—truck, rail, barge

Are there additional community resources in your area? What do you want or need to know?

Emergency recognition and alerting

The first step in a response is the recognition of an emergency situation. This may be identified by:

- Police
- County patrols
- Land owners
- Rail operators
- Tractor trailer operators
- Alarms or signals from pressure gauges

If you recognize a release: who do you call?

Emergency alerting and response procedures

- What warning signals or notification system are in place to alert you that a release has occurred?
- Does the Fire Department or the Police Department have a twitter feed that will be used to alert the public? Are there other social media tools that are in place for alerting? Should there be?
- Could radio, TV or cell phone signals be affected by a release?

- What actions are you to take in response to an alarm? These should be written for easy reference and placed in a location known to everyone in the home/business.

Evacuation routes to a refuge at a safe distance

- If an evacuation is ordered, you should receive:

    - Clear directions as to route and destination

    - Information about services available at the destination
      Examples: Sleeping accommodations, food, medical care

    - Time that you must be out of your business/residence

- Someone may be designated at check-in at the evacuation destination to conduct an accounting of all persons.

QUESTION: you have 30 minutes to evacuate—what would you take?

Shelter-in-place

- You may be asked to stay inside (shelter-in-place), with windows closed.

The American Red Cross has compiled a fact sheet on what to do if there is a shelter-in-place order for residents at home, at work, at school and in a vehicle: https://www.redcross.org/images/MEDIA_CustomProductCatalog/m4340182_shelterinplace.pdf. This fact sheet also provides a link to preparing a disaster supply kit in advance for a wide range of potential emergencies: http://www.redcross.org/get-help/prepare-for-emergencies/types-of-emergencies. See also https://www.ready.gov/ .

For companies, OSHA also provides detailed guidelines for sheltering-in-place: https://www.osha.gov/SLTC/etools/evacuation/shelterinplace.html

Site security and control

Responders will establish barriers to ensure that only authorized personnel can approach the release site. Do not cross these barriers.

Emergency medical treatment and first aid

Know where to seek attention, if your usual location is not available because of the release. Carry a list of prescriptions.

How will you get prepared to act responsibly if there is an emergency due to a fuel release? Various methods may be used to inform/train community members, including:

- Community-wide drills
- Public service announcements
- Educational programs at schools
- Postings in community buildings
- Town meetings
- Social media networks

Who is in charge during emergency response: The Incident Command System

When local, state, or federal officials respond to an emergency, a preplanned chain-of-command system is required and implemented. This is usually referred to as the **Incident Command System** (ICS). The ICS includes personnel fulfilling several different roles. The number of people involved and the role of each person depends on the types and nature of emergencies that could occur during a terrorist attack. Preplanning, training, and practice are required to ensure that each person knows his/her role within the overall ICS. Each member of the team must receive training for his/her anticipated role.

An overview of the ICS structure is shown on the chart below:

Note: This overall structure is adapted to the event and to match personnel available.
Other personnel may be added; people may perform in more than one role. Members of the entry team may require special training in dealing with a specific hazard.

The **Incident Commander** *also called senior official, project leader, on-scene coordinator, or on- scene incident commander* directs all aspects of the response and coordinates all team efforts.

This organized structure ensures command and execution with accountability.

An important role on this chart for residents is the Public Information Officer, who reports directly to the Incident Commander. This person establishes an area for the press and media and assures that accurate information is released, as it is cleared by the Incident Commander. Information released through this source is the most reliable.

Summary

Discuss the following questions as a group:

Have you identified the fuels transported through the community?

Do you know how you will be alerted if there is a release (or will ask)?

What are the consequences of not preparing?

Closing

Thank you for participating in this introduction to potential releases due to transport of fuels throughout the region. This program was designed as an introduction only, as part of preparedness at the community level. Overall goals were:

- Fuel transport routes in or near your community
- Hazards of fuel releases
- Response activities and actions during a release
- Structure of the emergency response teams
- Consequences of delaying preparation for the unlikely

Please ask any remaining questions.

In order to improve the program and meet your needs with any further training, it is most appreciated if you take a few minutes complete this evaluation form.

Thank you.