

How Local Emergency Planning Committees (LEPCs) Can Use Risk Management Program Tools When Planning for Chemical Accidents

“A walk through the process of the Risk Management Program as an LEPC”

Kansas Emergency Planning Committee Conference
July 2016

Presenters: Fatima Ndiaye and Laura Brewer



Agenda

Part 1: Understanding Accident Prevention Regulations

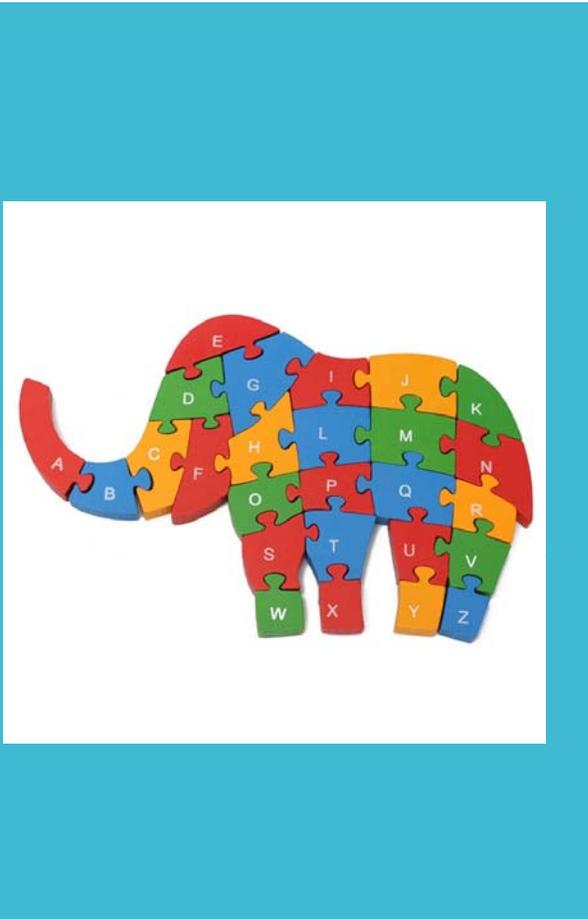
Part 2: Risk Management Program Tools for LEPCs

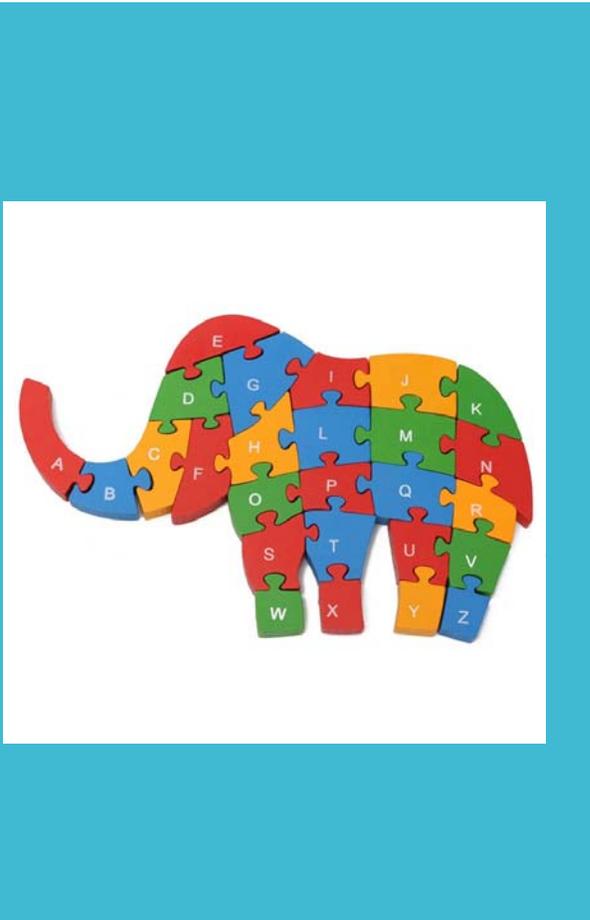
Part 3: How to Identify Risk Management Program Facilities and Tips for Approaching Facilities

Part 4: Other Resources for LEPCs and Responders

Our purpose: to save lives, properties and the environment

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Part 1: Understanding Accident Prevention Regulations

What led to the Chemical Accident Prevention Regulations?

Shifting Focus from Emergency Response Planning to Accident Prevention

- Emergency Planning and Community Right-to-Know Act (EPCRA)
 - Worker and community protection/planning laws
 - Safety Data Sheets developed
 - Planners/responders provided information on what chemicals are in their community
 - Establishes emergency notification requirements
- Clean Air Act (CAA) 112(r)
 - Chemical Accident Prevention Program Laws
 - Performance based requirements
 - Goal is to prevent accidents and minimize the consequences of releases that do occur



July 2016

Chemical Accident Prevention Programs

Clean Air Act (CAA) 1990 Amendments

- General Duty Clause (GDC)
- OSHA's Process Safety Management (PSM)
- EPA's Risk Management Program
- Chemical Safety Board (CSB)
 - Conducts incident investigations
 - Non-regulatory agency that makes recommendations to government, industry, and the facility

Facility owners/operators have primary responsibility for preventing accidents and minimizing a release's impact on the community

Does the facility have materials on-site that can do harm due to their toxicity or flammability?

What is the General Duty Clause CAA 112(r)(1)?

- Facilities must
 - Identify hazards that may result in releases
 - Design and maintain a safe facility
 - Minimize the consequences of releases that do occur
 - Coordinate with local emergency responders



No list of covered chemicals
No threshold amounts

Use industry standards or recognized and generally accepted good engineering practices (RAGAGEP)

Key to
accident
prevention



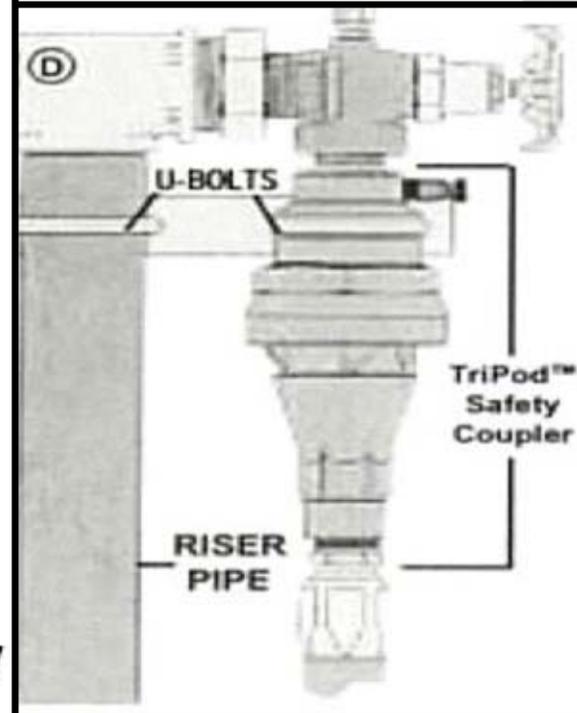
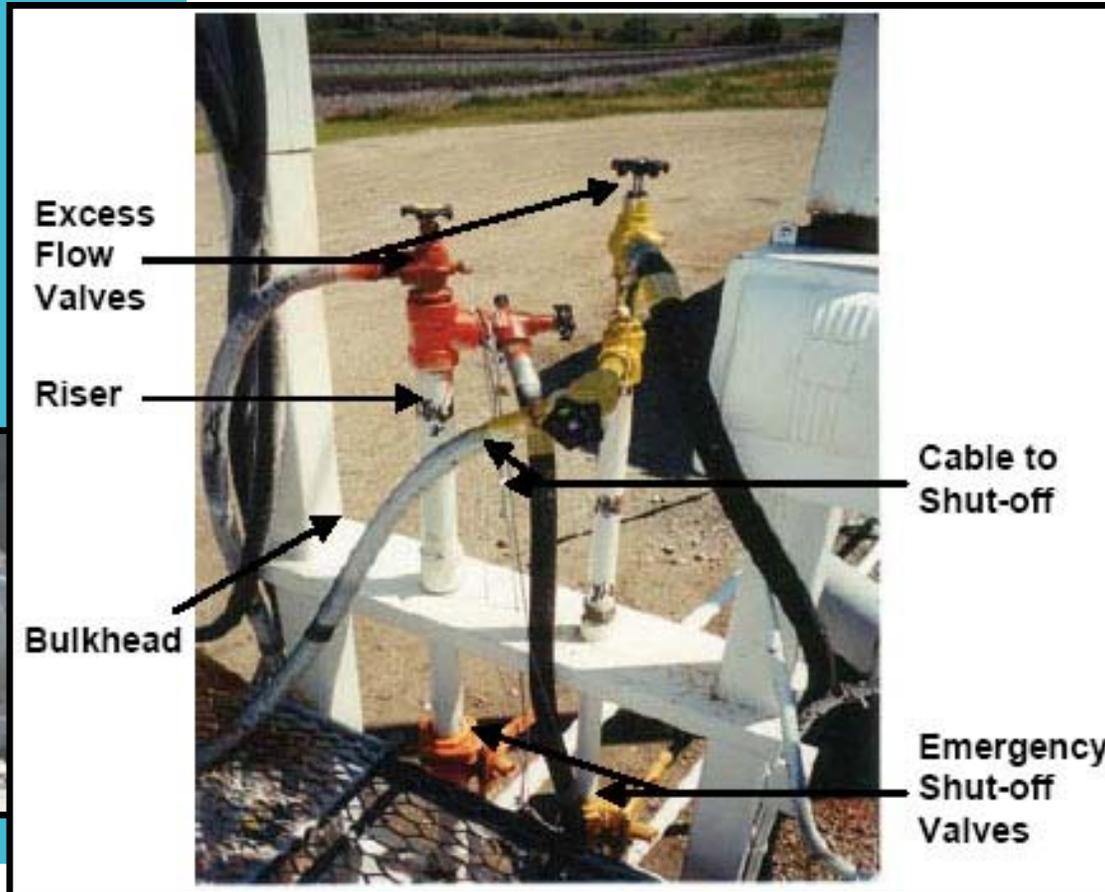
Facilities ensure that all elements of safe operation are consistently used and managed, day after day

What Is The Risk Management Program?

- CAA 112(r)(7)
- Fixed facilities
- 77 toxic and 63 flammable regulated substances
- Management System
- Hazard Assessment
- Prevention Program (Level 1, 2, or 3)
- Emergency Response Planning
- Risk Management Plan (RMP; submit to EPA)

Agricultural Ammonia

Majority
of Region
7 RMP
facilities



Now I know
what to do if
there's an
ammonia leak

Ammonia Refrigeration



Wastewater Treatment – Chlorine



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Chemical and Petroleum Facilities

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Program 1	Program 2	Program 3
<ul style="list-style-type: none"> • No public receptor in worst case scenarios • No RMP accidents with off-site death, injury, or environmental response/restoration 	<ul style="list-style-type: none"> • Not eligible for Program 1 • Not subject to Program 3 	<ul style="list-style-type: none"> • Subject to PSM or • In 10 specified NAICS codes
<p>Typically facilities with less volatile toxics or only flammables</p>	<ul style="list-style-type: none"> • Agricultural ammonia • Water treatment facilities in Kan., Mo., and Neb. 	<ul style="list-style-type: none"> • Larger facilities with complex processes <ul style="list-style-type: none"> • ammonia refrigeration, refining, ethanol, chemical manufacturing • Water treatment in Iowa

Five Risk Management Program Elements

Program Requirements	Program 1	Program 2	Program 3
Management system		X	X
Hazard assessment			
Worst-case release scenarios	X	X	X
Alternative release scenarios		X	X
Five-year accident history	X	X	X
Prevention Program		X	X
Emergency Response Program		X	x
Coordinate with Emergency Responders	X	X	X

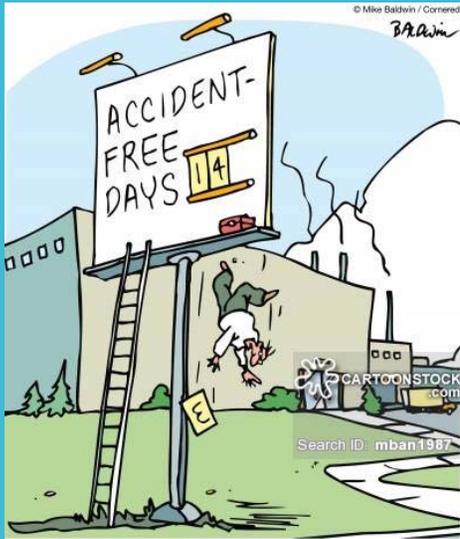
Management System

- Before bringing a covered chemical on-site
 - Determine “who will do what”
 - Document those decisions

Hazard Analysis

- How far into the community could a release impact (Worst Case Scenario)
 - Assumes release from largest vessel
- What accidents are most likely to occur (Alternative Case Scenario)
 - Facilities often analyze incidents that have occurred
- What has gone wrong (5-year accident history)

5-year Accident History



Risk Management Program Reportable Accidents

- **No** quantity thresholds
- Must include in the 5-year accident history in the RMP if accident resulted in:
 - Death
 - Injury
 - Significant property damage on-site
 - Off-site shelter-in-place, evacuation, environmental damage, property damage



“All the steps
a facility
takes to keep
the chemical
where it
belongs”

Prevention Program Requirements

Program 2

- Safety information
- Hazard review
- Operating procedures
- Training
- Maintenance
- Compliance audits
- Incident investigation

Program 3

- Process safety information
- Process hazard analysis
- Operating procedures
- Training
- Mechanical integrity
- Compliance audits
- Incident investigation
- Pre-startup review
- Management of change
- Employee participation
- Hot work permit
- Contractor accountability

Written Safety Information

- Use **current** Safety Data Sheet (SDS)
- Document maximum inventory, temperatures, pressure, flow, and composition
- Document equipment specifications
 - Process and Instrumentation Diagrams (P&IDs)
- Ensure the process is designed in compliance with recognized and generally accepted good engineering practices (RAGAGEP)

- ❖ Hazards of the regulated substances
- ❖ Technology of the process
- ❖ Equipment in the process



Hazard

Deviation which could cause damage, injury or other form of loss

Risk

Measure of potential human injury, economic loss, or environmental impact in terms of severity and likelihood

Hazard Review / Process Hazard Analysis

- **IDENTIFY** hazards
- **EVALUATE** risk
- **RECOMMEND** actions to reduce hazards
- **CONTROL** hazards
 - Follow-up on recommendations
 - Use analysis to inform the rest of the Risk Management Program
 - Install safeguards, develop operating/maintenance procedures, enhance training, etc.
- **REVALIDATE** the review at least every 5 years

Running
equipment to
failure is never
acceptable



Maintenance & Mechanical Integrity Requirements

- Preventive maintenance according to manufacturer or RAGAGEP
- Complete required inspections and tests
- Implement written procedures for ongoing integrity
- Identify potential failure before failure occurs

Good maintenance program

- Prevents accidents
- Saves the facility money
 - Longer life for equipment
 - No lawsuits in response to release/injuries

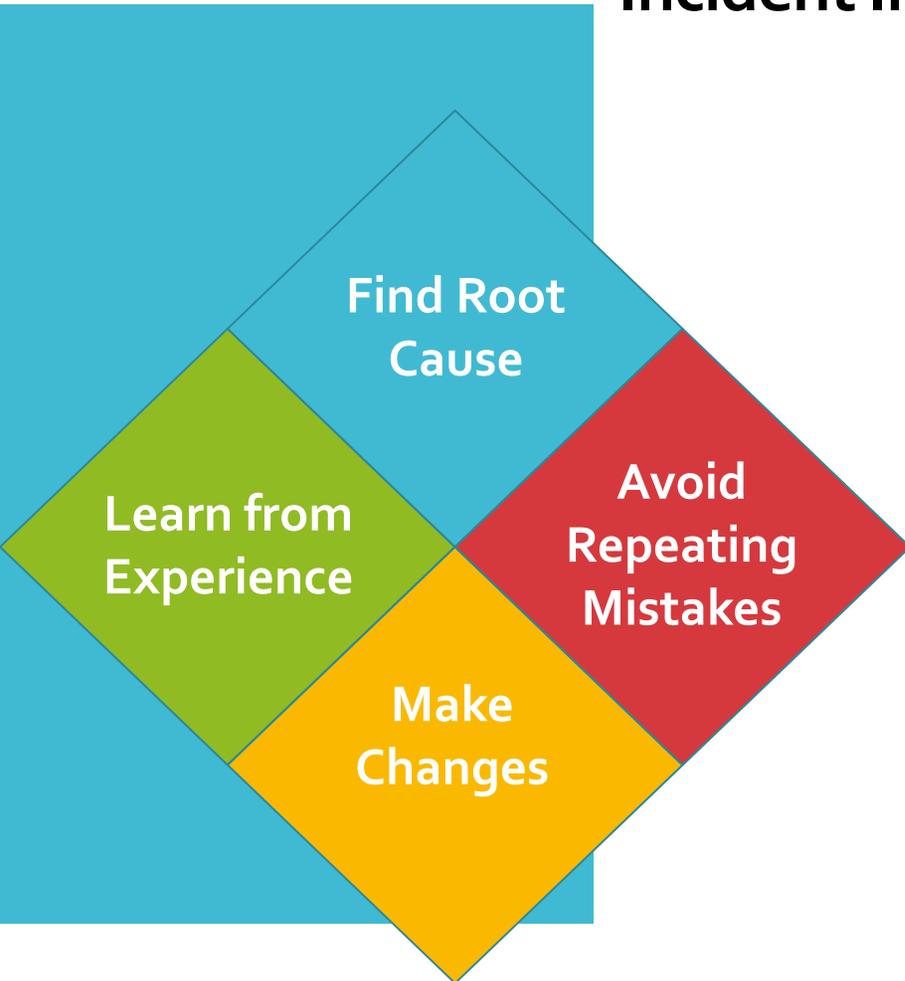
Learn from the
past to prevent
future harm

Incident Investigations

- Potential incidents to investigate
 - CERCLA/EPCRA reportable releases
 - Risk Management Program reportable accidents
 - Accidents reported on the OSHA 300 Log
 - Incidents where Management of Change procedures were implemented
 - Near misses

Don't wait for someone to get injured or for a release to occur before making changes

Incident Investigations (cont.)



- Initiate within 48 hours
 - Includes weekends/ holidays
- Establish knowledgeable investigation team
- Summarize investigation in written report
- Promptly address and resolve findings

What is
included in
WRITTEN
report?

Incident Investigations (cont.)

- Date of incident
- Date investigation began
- Description of incident
- Factors that contributed to incident
- Address investigation team's findings and recommendations

How LEPCs fit into the Risk Management Program Regulations

Does the Facility Rely on Emergency Responders to Stop a Release of the Regulated Substance(s)?

- **Yes, local first responders will stop the release.**
Facility must:
 - Comply with 40 CFR 68.90
 - Coordinate with local emergency planners and/or responders
- **No, if the facility has trained HAZMAT team to stop the release.**
 - Comply with 40 CFR 68.90 and 40 CFR 68.95
 - Answer **all** questions in Section 9 of the RMP

Requirements for Responding Facilities



- Develop an Emergency Response Program and Plan - 40 CFR 68.95(a)
 - Include procedures for informing the public and **local emergency agencies** about accidental releases
 - Documents proper first aid and emergency medical treatment necessary
- Upon request, provide information necessary for developing and implementing a community emergency response plan - 40 CFR 68.95 (c)
- Include in RMP the name / telephone number of the local agency with which emergency response activities are coordinated - 40 CFR 68.180 (b)

Ultimately the facility has a duty to minimize the consequences of accidents that do occur

What If Local Emergency Responders Are Not Capable of Responding to A Release of A Regulated Substance?

- Facilities can:
 - Develop an emergency response program
or
 - Contract with a company that can provide timely response
or
 - Help build the community's ability to respond

Note: Responding can be getting people out of harm's way and letting a release run its course

Responding Facilities	Non-Responding Facilities
Develop Emergency Response Plan	Develop an Emergency Action Plan
<ul style="list-style-type: none"> • Procedures for informing public • Procedures for informing emergency response agencies • Documentation of proper first aid and medical treatment • Procedures and measures of emergency response 	Coordinate with Local Response Agency for potential releases: <ul style="list-style-type: none"> - Fire Department for flammables - LEPC for toxics
Procedures for using, inspecting, testing, and maintaining emergency response equipment	Work with Fire Department / LEPC to ensure facility is covered in the community emergency response plan
Training for employees in relevant procedures, on emergency equipment, and response techniques	Work with Fire Department / LEPC to ensure it has the equipment and training to respond
Coordinate plan with LEPC and other response officials	

How rule
modernization
might impact
LEPCs

Proposed Rule Changes Would Require Facilities with Program 2 & 3 Level Processes to

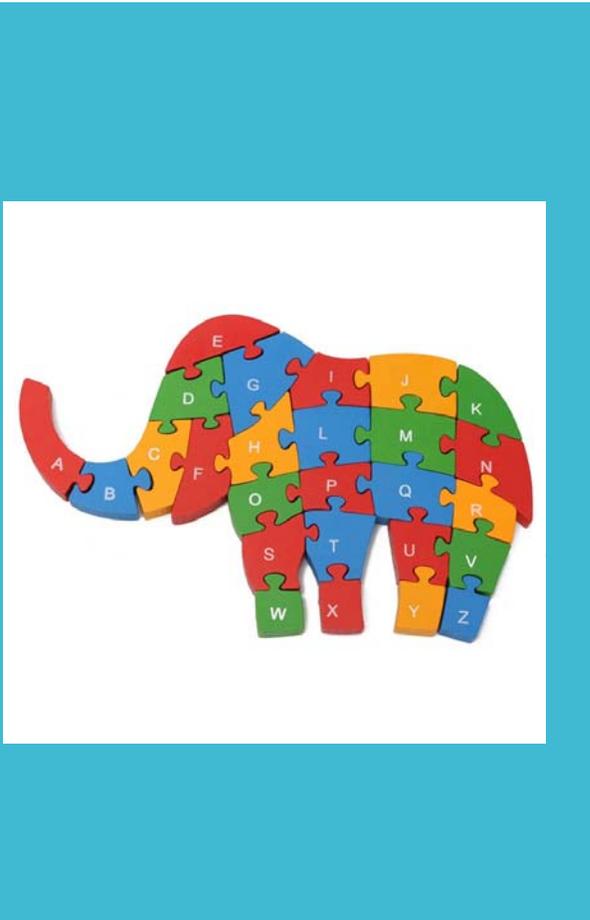
- Annual coordination with local emergency response agencies
- Conduct notification exercises annually
- Provide summaries to LEPCs, Tribal Emergency Planning Committee (TEPC), or other response agencies upon request
 - Compliance audits, emergency response exercises, accident history and investigation reports

How rule modernization might impact LEPCs (cont.)

Proposed Rule Changes Would Require Responding Facilities to

- Conduct full field exercise at least once every five years
- Conduct one tabletop exercise annually in the other years





Part 2: Risk Management Program Tools for LEPCs

Risk
Management
Program items
facilities are
required to
have

LEPCs/Emergency Responders Can Ask For

- Current Copy of RMP
 - Off-site Consequence Analysis
 - List and amounts of regulated substances
 - Accidents that have occurred in last 5 years
 - Lists emergency contacts
- Copy of incident investigation reports
 - May include information on near misses
 - Discusses what happened and follow-up taken
- Copy of Emergency Response or Action Plan

RMP Section 1: Registration

- Facility name
- Location (including latitude and longitude)
- Person in charge of Risk Management Program (including contact information)
- Emergency contact information (including 24-hour number)
- Covered by
 - OSHA PSM / CAA Title V – if “yes” likely poses higher risk to community
 - EPCRA 302 – may be required to submit an annual Tier II Report

RMP Section 1: Registration

- Process chemicals
 - What regulated chemicals are in the processes
 - Ask for SDS
 - Maximum amount that will ever be in covered processes at one time
 - Toxic – Coordinate with LEPC
 - Flammable – Coordinate with Fire Department

RMP Sections 2-5: Worst Case & Alternative Case Scenarios

- Substance released
- Amounts released
- Distance to endpoint
- Residential population in “circle”
- Types of public and environmental receptors potentially impacted
 - Schools, residences, hospitals, prisons, public recreation, commercial/industrial, national/state parks, wildlife sanctuaries, federal wilderness, other

Potential Impact Zone

**Worse-case
release scenario
analysis (Red
Circle) – impacts
350 people***

**Alternative
release scenario
analysis (Yellow
Circle) – Impacts
15 people***



*based upon 2010 census

Planning tool
to perform
Offsite
Consequence
Analysis as
part of the
Hazard
Assessment

RMP*COMP

<https://www.epa.gov/rmp/rmpcomp>

Estimated Distance Calculation

 **Estimated distance to toxic endpoint:** 1.3 miles (2.1 kilometers)

This is the downwind distance to the toxic endpoint specified for this regulated substance under the RMP Rule. Report all distances shorter than 0.1 mile as 0.1 mile, and all distances longer than 25 miles as 25 miles.

Scenario Summary

Chemical: Ammonia (anhydrous)

CAS number: 7664-41-7

Threat type: Toxic Gas

Scenario type: Worst-case

Quantity released: 60000 pounds

Release duration: 10 min

Release rate: 6000 pounds per minute

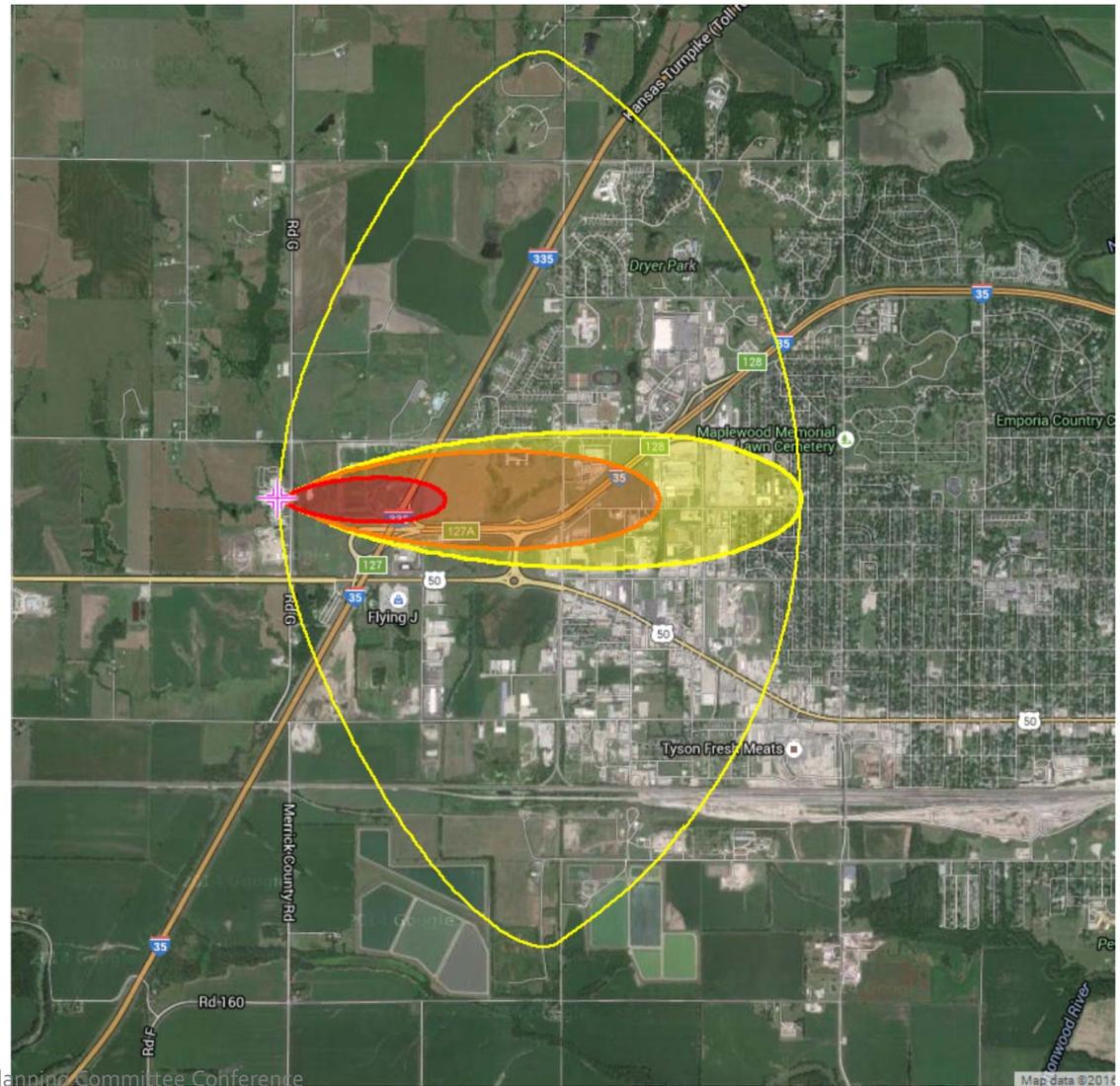
Hazard Assessment - ALOHA

Offsite consequence analysis – Worst Case

**ERPG-3 (1500 ppm)
(Red Circle) – impacts
0 people***

**IDLH (300 ppm)
(Orange Circle) –
impacts 286 people**

**ERPG-2 (150 ppm)
(Yellow Circle) –
Impacts 649 people***



ERPG – Emergency Response Planning Guide
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*based upon 2010 census

Worse than the
“worst case”
has occurred



Section 6: Accident History

These are
accidents that
have happened
in your
community

- Date
 - Ask if incident investigation was done, if so ask for incident report
- Description of what happened
- Description of why it happened
- Were off-site responders notified
- What changes were made to prevent future occurrence
- Description of the on- and off-site impacts

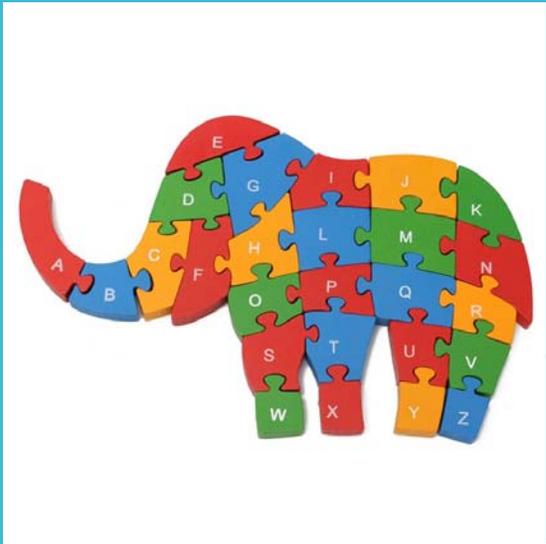
Reminder: These accidents either caused damage to human health or the environment or impacted the community

Section 7-8: Prevention Program

- Regulated chemicals and amount in process
- Date of last incident investigation
 - Ask to see incident investigation report
 - Ask for all incident reports in last 5 years

Executive Summary

- Narrative includes:
 - What is on-site and why
 - Accidents that have occurred in last five years
We encourage facilities to discuss EPCRA reportable releases but that is not required
 - Emergency response information
 - Planned safety changes



Part 3: How to Identify Risk Management Program Facilities and Tips for Approaching Facilities

RMPInfo

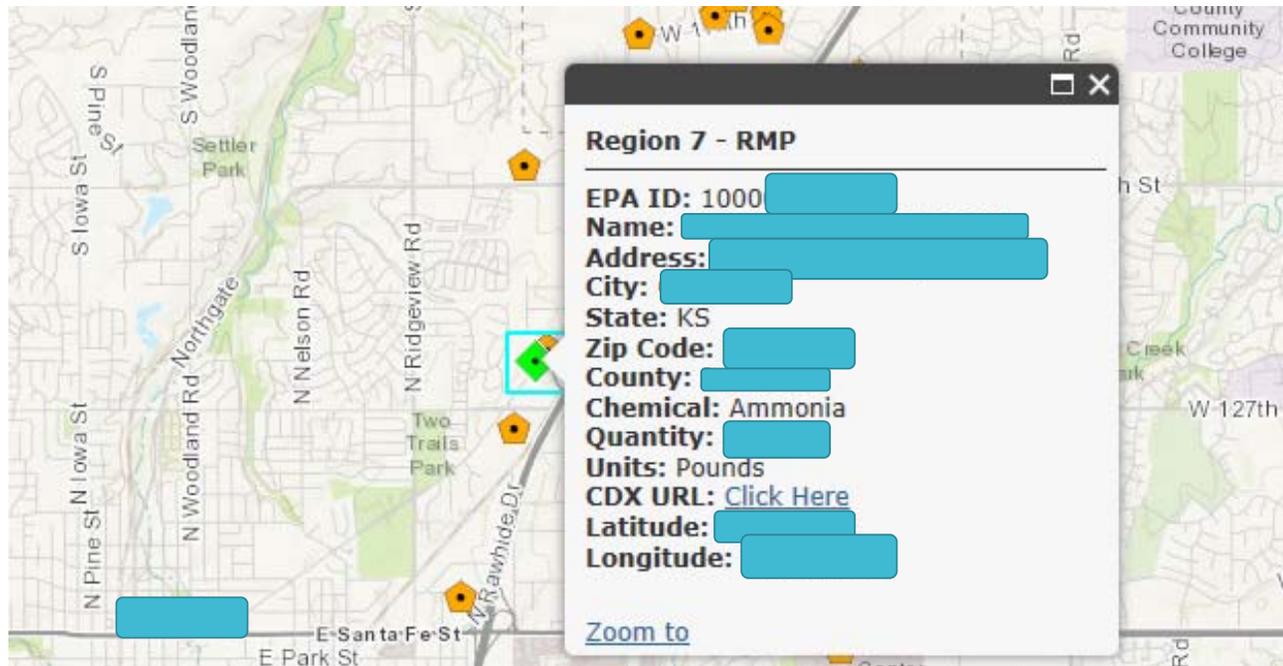
- LEPC members can request access to the database

The screenshot shows the EPA RMP*Info Risk Management Plan Query web application. The header features the EPA logo and the text "United States Environmental Protection Agency". The left sidebar contains a navigation menu with the following items: RMP*Info, RMP Query, RMP Reports, KML Files, Overview, Data Quality Information, Model, Tracking System, Database Totals, MyCDX, and Inbox. The main content area displays the breadcrumb "You are here: RMP Query" and the title "RMP*Info Risk Management Plan Query". Below the title is a link for "Show querying details." and a paragraph explaining the search process: "Start your search now by filling in the search options below. Remember that the system will only provide a list of RMPs. The more criteria you enter, the fewer RMPs will be found in the search." A bold instruction states: "To display details about each section, click the section heading. Expand all sections." The first search section is "EPA Facility Identifier", which includes a text input field and a "Help" link. The second search section is "Facility Name", which includes a text input field and a "Help" link. At the bottom of the search options, there are two radio buttons: "Match ALL Words" (unselected) and "Match ANY Words" (selected).

RMPInfo access drawbacks

- Must remember log-in and password
- Chemical Safety Information, Site Security and Fuels Regulatory Relief Act (CSISSFRRRA)
 - If getting data from RMPInfo, you must set up a system to secure information printed from database
 - Not required if you get information from facility

Region 7 Executive Order Workgroup Mapper (In Development)



In this example, diamonds are RMP facilities and pentagons are Tier II facilities



Kansas EPCRA Tier II Emergency & Hazardous Chemical Inventory

Mail to: Kansas Department of Health & Environment
1000 SW Jackson Suite 330
Topeka KS 66612-1365
(785)296-1688

Important: Read all instructions before completing form

1. Reporting Period
From January 1 to December 31, 20__

2. Facility Identification		2a. New Facility <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	3a. Owner/Operator Identification
Name _____		Business Name _____	
Street Address _____		Address _____	
Latitude _____ Longitude _____		City _____ State _____	
Section _____ Township _____ Range _____		Business Phone _____	
City _____ County _____ State KS Zip _____		Submitter _____	
Phone _____ NAICS _____		Email _____	
Max # of occupants _____ <input checked="" type="checkbox"/> Manned <input type="checkbox"/> Unmanned		Dun & Bradstreet _____	
RMP Fac ID: 1000 _____ <input type="checkbox"/> N/A		3b. Mailing Address if different from above	
TRI Fac ID _____ <input type="checkbox"/> N/A		Business Name _____	
Subject to Emergency Planning under Section 302 of EPCRA (40 CFR part 355)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Address _____	
Subject to Chemical Accident Prevention under Section 112r of CAA (40 CFR part 68)? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		City _____ State _____	
		ATTN: _____	
		Phone _____	

Check Tier II Reports

LEPCs and facilities should work together to prepare for emergencies

When Meeting with Facilities / Requesting Documents

- Tell facilities
 - Why the information will help you do your job to protect the community
- Requesting RMP can help get your foot in the door to discuss emergency planning
- Suggest you conduct a joint emergency drill
- Encourage them to join the LEPC

LEPCs need a good partnership with facilities

Obtaining Information from Reluctant Facilities

- Request in writing (*use Certified Mail*).
 - Emphasize importance to the community.
 - Ask why they will not give out the information.
 - Give them the opportunity to demonstrate their good corporate citizenship.
- If they still refuse, then ask for assistance from the state/SERC, then from EPA
- Citizen / Local Suits

**When on-site,
if you see the
following,
please inform
your
SERC/EPA**

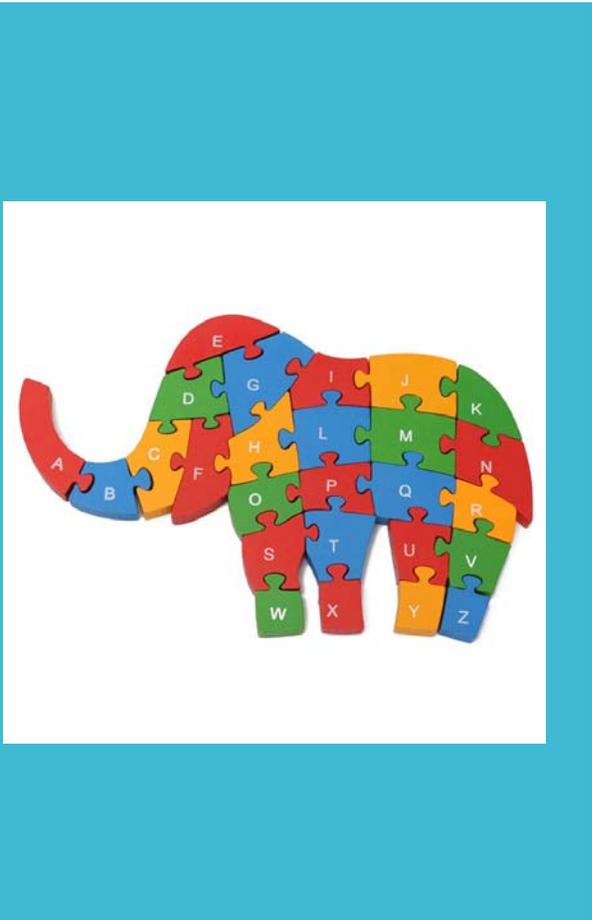
EPA's Top 10 List for Inspections

1. Releases
2. Facilities have unreported EHS chemicals
3. Poorly maintained equipment and/or poor chemical housekeeping
4. Chemical staining, spillage, dumping, burial
5. Vessels/containers leaking and no action being taken
6. Appearance of dumping untreated waste/chemicals down drains, storm sewers, or waterways

**When on-site,
if you see the
following,
please inform
your
SERC/EPA**

EPA's Top 10 List for Inspections

7. More than 500 pounds of anhydrous ammonia, 100 pounds of chlorine gas, or 10,000 pounds of any chemical and local responders did not know it was there
8. No emergency procedures/plan in event of chemical spill
9. Significant tankage of oil/petroleum without secondary containment
10. Visual dense smoke or dust (not steam) leaving facility



Part 4: Other Resources for LEPCs and Responders

LEPCs' sources for finding chemical hazards in communities

Various Forms and Records

- Tier II Reports
- Review Safety Data Sheets (SDSs)
 - Potential effects to human health and environment

Use databases

- Right-to-Know website
- RMPInfo
- Utilize CAMEO to understand risks associated with various chemicals

Other Tools

- List of Lists – Lists reportable and threshold planning quantities of chemicals
- Use dispersions tools such as RMP*comp and ALOHA

Lessons Learned Information System

Sharing Best Practice Information

- High-performing organizations share best practices on chemical facility safety and security, and on community preparedness
- Best practices are
 - Voluntary
 - Documented
 - Measurable
 - Repeatable
 - Subject to evaluation



Example
topics for best
practices for
Federal-
State-Local-
Tribal groups

- Obtaining and interpreting risk information
- Planning for large scale emergencies
- Balancing the importance of community safety



Submitting Best Practices



- Request form: eo.chemical@hq.dhs.gov
- Submit form: eo.chemical@hq.dhs.gov
 - Subject line: Chemical Safety and Security Best Practice Submission
- All submissions reviewed by a workgroup prior to forum posting
- For more information
 - Chemical EO Website
<https://www.osha.gov/chemicalexecutiveorder/LIS/index.html>
 - Email eo.chemical@hq.dhs.gov

Viewing Lessons Learned

- Authored content documents trend analysis, grant cases, webinars, lessons learned, innovative practices
- FEMA
<https://www.fema.gov/lessons-learned-information-sharing-program>
- Homeland Security Digital Library
<https://www.hsdl.org/c/>

Kansas Local Emergency Planning Committee Resources and Links



<http://www.kansastag.gov/kdem.asp?PageID=177>

LEPC Resources include

- Kansas LEPC Handbook
- LEPC Membership
- Reporting Schedules
- CFATS Information

EPA Websites

- Risk Management Program: www.epa.gov/rmp
- Risk Management Program Guidance: www.epa.gov/rmp/guidance-facilities-risk-management-programs-rmp
- List of Lists: www.epa.gov/epcra/consolidated-list-lists
- EPCRA: www.epa.gov/epcra
- Download CAMEO, Marplot and Aloha: www.epa.gov/cameo
- ECHO (facility compliance history): www.echo.epa.gov/
- RMP*Comp Program: www.epa.gov/rmp/rmpcomp

Non EPA Websites

- Department of Homeland Security:
www.hsdl.org/c/
- WISER: wiser.nlm.nih.gov/ (mobile app)
- DOT Emergency Response Guide: (mobile app)
www.phmsa.dot.gov/hazmat/outreach-training/erg
- Chemical Safety Board: www.csb.gov/
- Right-to-Know information: www.rtknet.org/
- Asmark Institute MyRmp for Ag Ammonia
www.asmark.org/myRMP/
- Chlorine Emergency Preparedness
www.chlorineinstitute.org/emergency-preparedness/emergency-preparedness-overview/

LEPCs are a vital part of EPCRA's emergency response framework

In Summary - LEPC's Roles and Recommendations

- Meet with facilities to discuss
 - Are they a responding facility
 - Risks posed by chemicals
 - What potential accidents they plan for
 - Identify who will be in charge if a release occurs
 - Determine how you'll communicate with the public as needed during a release
- Request to view documents developed per the Risk Management Program Rule
- View other resources to know where to spend your community's resources

For More Information

Presenters

Fatima Ndiaye, Kansas EPCRA/ CAA 112(r) Coordinator,
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Laura Brewer, EPCRA/CAA 112(r) Compliance Officer,
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Other EPA Contacts

Pat Reitz, EPCRA/CAA 112(r) Program Coordinator,
(913) 551-7674, reitz.patricia@epa.gov
(send requests for access to RMPInfo to Pat)

Terri Blunk, EPCRA/CAA 112(r)/SPCC/UST/LUST
Outreach Coordinator, (913) 551-7013,
blunk.terri@epa.gov