EPA Region 7
Prevention of Ammonia Releases
Jodi Harper
Kansas City, KS
GCAP Ammonia Safety Day
June 2017
New State Coordinators for EPA Region 7’s EPCRA/Risk Management Program

• **Missouri**: Dave Hensley, hensley.dave@epa.gov, 913-551-7768
• **Iowa**: Krystal Stotts, stotts.krystal@epa.gov, 913-551-7946
• **Nebraska**: Terri Blunk, blank.terri@epa.gov, 913-551-7013
• **Kansas**: Fatima Ndiaye, ndiaye.fatimatou@epa.gov, 913-551-7383

• Compliance assistance for industry
• Assists Local Emergency Planning Committees (LEPCs) and the State Emergency Response Commission (SERC)
Other Region 7 Federal Contacts

Department of Homeland Security
Chemical Facility Anti-Terrorism Standards (CFATS)
   David Martak; David.Martak@HQ.DHS.GOV; 202-617-0984

Department of Labor (DOL) / Occupational Safety and Health Administration (OSHA)
   Brian Drake; drake.brian@osha.gov; 816-502-9011
Lessons from West, Texas

- Better federal coordination
- Rules need to be modernized
- Better local coordination
- Enhanced Emergency Planning & Response
- Increased Hazard Awareness
- Land Use Planning and Zoning

https://youtu.be/pdDuHxwD5R4
40 CFR 68  Rule Modernization Time Line

• July 31, 2014 – EPA requested information from public / regulated community

• November 4, 2015 – Small business advocacy review panel

• March 14, 2016 – Proposed rule published

• January 13, 2017 - Final rule published

• January & March 2017 – Delay of effective date
  • June 19th, 2017 - New effective date

• April 2017
  • Proposed to delay the effective date until February 2019
  • Public meeting held in April; Public comment period closed May 19th, 2017
  • If the effective date is altered that will be announced by June 19th
Major Changes to 40 CFR 68 Included

- Conduct root cause analysis
- Perform third party audits after accidents
- Hold public meeting within 90 days of an accident
- Complete annual notification exercises
- Coordinate annually with local emergency response agencies
- Facility information is made available to public upon request
- Changes made to investigations
- Revisions to Risk Management Plans (RMPs)
Important Notes About Risk Management Program Rule Change

• Compliance with emergency response coordination activities required by one year after the effective date

• RMPs to reflect new and revised data elements by five years after the effective date

• Final rule and background
  https://www.epa.gov/rmp/final-amendments-risk-management-program-rmp-rule

• Questions and answers:
Risk Management Program Chosen for National Enforcement Initiative (NEI)

- October 2016-September 2019
- Greater emphasis on outreach and enforcement
- Ammonia refrigeration chosen as one of the priority sectors
Region 7 Risk Management Program Facilities and Accidents

Facilities

- Agriculture: 74%
- Chemical Manufacturing: 6%
- Food & Beverage: 11%
- Energy: 3%
- Water & Wastewater: 4%
- Other: 2%

RMP Reported Accidents

- Agriculture: 41%
- Chemical Manufacturing: 9%
- Food and Beverage: 35%
- Energy: 6%
- Water and Wastewater: 6%
- Other: 3%
Revised Refrigeration Manual Anticipated this Summer
Risk Management Program Reportable Accidents

• **Not** based on the amount released
• 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
Clean Air Act Amendments of 1990

- General Duty Clause (Section 112(r)(1))
- OSHA Process Safety Management (PSM)
- EPA Risk Management Program (Section 112(r)(7))
- Established Chemical Safety Board (CSB) to investigate incidents
Should I be concerned about CAA 112(r)?

The Clean Air Act applies to ALL ammonia refrigeration facilities

<table>
<thead>
<tr>
<th>Less than 10,000 pounds</th>
<th>10,000 pounds or more</th>
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<tbody>
<tr>
<td>General Duty Requirements&lt;br&gt;CIA 112(r)(1)</td>
<td>Risk Management Program Requirements&lt;br&gt;CIA 112(r)(7)</td>
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</tbody>
</table>
Your Facility has a General Duty to

• Identify hazards which may result in releases, using appropriate hazard assessment techniques
• Design and maintain a safe facility, taking steps to prevent releases
• Minimize consequences of accidental releases that do occur
• Coordinate with local emergency responders
Key to Accident Prevention

• Use industry standards
• General Duty: IIAR Ammonia Refrigeration Management (ARM) is one example
• Risk Management Program: IIAR bulletins, various other RAGAGEP
Elements of a Risk Management Program

• Management System
• Hazard Assessment
• Prevention Program – Level 3
• Emergency Response Planning
• Risk Management Plan (submit to EPA)
Risk Management Program vs. OSHA Process Safety Management (PSM)

- PSM and Risk Management Prevention Program Level 3 are essentially the same
- Requirements of the Risk Management Program NOT found in PSM
  - Management system
  - Hazard assessment
  - Emergency response program
  - RMP submittal
Quick Ways to Be Added to Our Inspection List

• Have accidents or releases, especially where
  • Several people need treatment or someone dies
  • Public is impacted
  • Significant off-site environmental impact

• Miss a five-year RMP submittal update

• Have >10,000 lbs. ammonia and no RMP

• Deregistered facilities appear active (Google Earth Maps)
Notification of Inspection

Advanced notification of inspection is *not required*
Region 7’s Our Inspection Process

• Arrival
• Opening conference
• Document review
• Facility walk-through
• Inspector takes time to make preliminary findings
• Closing conference
Inspection – Opening

• Inspector shows credentials/intro letter
• Discuss agenda
• Go over forms
  • Notice of inspection
  • Receipt for samples/documents
  • Multimedia checklist
  • Confidential Business Information (CBI) disclosure form
  • Preliminary findings
Inspection – Document Review

• Format
  • Will scan paper documents

• Paper copies may be taken if
  • Document won’t fit through scanner
Typical Documents Reviewed

• RMP (and documents supporting dates referenced in RMP), EPCRA Tier II report, OSHA 300 log, Offsite Consequence Analysis documentation, emergency response documents

• Bulk of time spent on prevention program elements
  • Safety information
  • Hazard review (report and tracking)
  • Maintenance (tests/inspections/work orders)
  • Compliance audits (report and tracking)
  • Incident investigations (report and tracking)
  • Operating procedures
  • Training
Facility Walk-Through

• Usual part for employee representative participation
• Compare physical plant to current industry standards/codes/RAGAGEP and Risk Management Program documents
• Take photos of the condition of the equipment
• Ask employees questions
End of Inspection

• After document review and walk-through, inspector develops preliminary findings

• Closing conference
  • Go over preliminary findings
  • Sign receipt for documents
  • Sign CBI declaration
Post Inspection - Inspectors

• Contact LEPC (toxics) or fire department (flammables) related to emergency response planning
• Request additional information from facility after further review of documents
• Write report
Thoughts from EPA R7 Inspectors

- Recommendation – Take time to make electronic copies of all Risk Management Program documents
  - Back up information
  - Develop recordkeeping procedure
- Make plans for transfer of documents from old owner to new owner
- Don’t wait for EPA’s phone call or visit to review program
Process Safety Information Issues

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

Second Highest in R7

10% of violations cited at Region 7 refrigeration facilities inspected from 2011- Apr. 2017
Process Hazard Analysis Issues

- What can go wrong?
  - Failure to consider all chemical physical properties
  - Equipment design limitations and maintenance
  - People – training, human error
- Recognized safeguards should be used
- Evaluate every five years
  - Industry standards
  - Accidents/incidents/near misses in past five years
  - Changes to facility AND neighboring area

Highest in Region 7
11% of violations cited at Region 7 refrigeration facilities inspected from 2011- Apr. 2017
Possible Information Source for Your Next PHA – U.S. Chemical Safety Board www.csb.gov

• Independent federal agency charged with investigating industrial chemical accidents

• Does not issue fines or citations, but makes recommendations to plants, regulatory agencies such as to OSHA, EPA, industry organizations, and labor groups

• Conducts root cause investigations of chemical accidents at fixed industrial facilities
  • Has found inadequate or poor emergency planning or response to be a root cause for 14 incidents
  • Has investigated incidents at refrigeration facilities
Standard Operating Procedures (SOPs) Issues

- Do not address each phase - particularly temporary operations
  - State in SOPs if temporary operations are not conducted
- Overly generic and do not reflect site-specific practices
- Do not address consequences of deviation or steps required to avoid deviation

7% of violations cited at Region 7 refrigeration facilities inspected from 2011- Apr. 2017
Training on SOPs Issues

• Initial training not completed (or documented)
• Refresher training not completed at least every three years

5% of violations cited at Region 7 refrigeration facilities inspected from 2011- Apr. 2017
Mechanical Integrity Issues

• Not in accordance with industry standards
• Condition of insulated/covered piping
  • Is it rusting underneath?
• Not performing inspections or tests on process equipment

5% of violations cited at Region 7 refrigeration facilities inspected from 2011- Apr. 2017
Compliance Audit Issues

• Not completed every three years
  • Play inspector for a day
  • Consider changes at facility and changes to RAGAGEP
  • Does your documents reflect actual practices
    • SOPs
    • Mechanical Integrity
• Not certified

Third Highest in R7

10% of violations cited at Region 7 refrigeration facilities inspected from 2011- Apr. 2017
Emergency Response Issues

• On RMPs many facilities indicate they have a full emergency response program when in reality they utilize an emergency action plan

• How does your facility respond to anhydrous ammonia releases?
  • We don personal protective gear and reenter the hot zone to actively stop the release or fight the fire
    • Develop emergency response program/plan per 40 CFR 68.95
    • Answer all the questions in Section 9 of the RMP
  • We rely on local first responders
    • Answer 9.1a, 9.1b, 9.7a, 9.7b, and 9.8
    • No other questions in Section 9; when in doubt, read instructions!

Emergency Action Plan ≠ Emergency Response Plan
Response Capability

• Do the local first responders have the capability to respond?
  Your facility has a duty to minimize the consequences of a release

• Utilize Offsite Consequence Analysis in your Hazard Assessment and share with first responders to aid in planning and preparedness
  If the local responders do not have the capability to respond, your facility must find a way to develop that capability
Management System Issues

• Not documented
  • Clearly indicate who is responsible for Risk Management Program implementation

• Failure to conduct compliance audits, process hazard analyses, RMP corrections/updates, etc., are indicators of failure of the Management System
Make Sure to Timely Update or Resubmit Your RMP

• Update emergency contact within one month
• Update accidents within six months
• Full resubmission at least every five years (may be more often)
RMP*eSubmit Tips

• Don’t wait until the last minute
• Can take up to a week for the Electronic Signature Agreement (by certifying official) to be processed
• If certifying official or preparer has changed, need to set up new personnel in CDX system
<table>
<thead>
<tr>
<th>EPCRA 304 / CERCLA 103 Release</th>
<th>CAA 112(r) Accident</th>
<th>CAA 112(r) Incident Investigation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trigger</strong></td>
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</table>
| Reportable quantity             | No reportable quantity | Any incident that resulted in or had the potential to result in a catastrophic release. Could include:  
|                                 | • Involves a regulated substance from a covered processed resulting in specified consequences | • EPCRA reportable releases  
|                                 |                     | • RMP reportable accidents  
|                                 |                     | • Event where nothing was released |
| **Call**                        |                     |                                 |
| • Local Emergency Planning Committee | Considers consequences | Determine causes and complete follow-up to prevent recurrence |
| • State Emergency Response Commission | • Deaths, injuries, hospitalization, property damage |                     |
| • National Response Center      | • Off-site shelter-in-place, evacuation, environmental damage |                     |
| **Notes**                       |                     |                                 |
| **When**                        | Update RMP within 6 months | Start within 48 hours |
| Within 15 minutes               |                     |                                 |
Who to Call for EPCRA/CERCLA Reportable Releases

Immediately contact (within 15 minutes)

• All LEPCs that may be affected by release
  • Typically through 911
• All SERCs or TERCs that may be affected by release
• The National Response Center (NRC) 1-800-424-8802

Make Notifications Simple

• Who makes the calls?
  • Will they be able to provide all necessary information?
Why 15 Minutes?
In these emergency situations, every minute may count in taking effective action, and immediate notification of local authorities is essential. Ordinarily, delays in making the required notification should not exceed 15 minutes after the person in charge has knowledge of the release, and “immediate notification” requires shorter delays whenever practicable.

The lessons of the past year have underscored the importance of effective reporting requirements, and tough penalties for failure to report releases.
Call Your Local Responders First

• Don’t wait until you know you’ve exceeded a threshold to call
• Information helps responders
  • Know how to respond if they get calls from the public
  • Start preparing for deployment if an incident were to escalate

Do NOT have an emergency event be the first time you meet your local emergency responders
Tier II Report Changes
For Reports Due March 1st, 2018

• Changes due to U.S. conforming to the United Nations Globally Harmonized System of Classification and Labeling of Chemicals
• Changes reflect information on updated Safety Data Sheets
• For more information: https://www.epa.gov/epcra/epcra-non-section-313-amendments-and-guidance
<table>
<thead>
<tr>
<th>Physical Hazards (prior to GHS adoption)</th>
<th>Physical Hazards (after adoption, revised 2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combustible Liquid</td>
<td>Flammable (gases, aerosols, liquids, or solids)</td>
</tr>
<tr>
<td>Compressed Gas</td>
<td>Gas under pressure</td>
</tr>
<tr>
<td>Explosive</td>
<td>Explosive</td>
</tr>
<tr>
<td>Flammable</td>
<td>Self-heating</td>
</tr>
<tr>
<td>Pyrophoric</td>
<td>Pyrophoric (liquid or solid)</td>
</tr>
<tr>
<td>Oxidizer</td>
<td>Oxidizer (liquid, solid or gas)</td>
</tr>
<tr>
<td>Organic Peroxide</td>
<td>Organic peroxide</td>
</tr>
<tr>
<td>Unstable (Reactive)</td>
<td>Self-reactive</td>
</tr>
<tr>
<td>Water-Reactive</td>
<td>In contact with water emits flammable gas</td>
</tr>
<tr>
<td>Corrosive to metal</td>
<td></td>
</tr>
<tr>
<td>Hazard Not Otherwise Classified (HNOC)</td>
<td></td>
</tr>
<tr>
<td>Health Hazards (prior to GHS adoption)</td>
<td>Health Hazards (after adoption, revised 2012)</td>
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<td>--------------------------------------</td>
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</tr>
<tr>
<td>Carcinogens</td>
<td>Carcinogenicity</td>
</tr>
<tr>
<td>Toxic or highly toxic agents</td>
<td>Acute toxicity (any route of exposure)</td>
</tr>
<tr>
<td>Reproductive toxins</td>
<td>Reproductive toxicity</td>
</tr>
<tr>
<td>Irritants; Corrosives</td>
<td>Skin Corrosion or Irritation</td>
</tr>
<tr>
<td>Sensitizers</td>
<td>Respiratory or Skin Sensitization</td>
</tr>
<tr>
<td>Agents which damage the lungs, skin, eyes, or mucous membranes</td>
<td>Serious eye damage or eye irritation</td>
</tr>
<tr>
<td>Hepatotoxins</td>
<td>Specific target organ toxicity (single or repeated exposure)</td>
</tr>
<tr>
<td>Nephrotoxins</td>
<td>Germ cell mutagenicity</td>
</tr>
<tr>
<td>Neurotoxins</td>
<td>Aspiration hazard</td>
</tr>
<tr>
<td>Agents which act on the hematopoietic system</td>
<td>Hazard Not Otherwise Classified (HNOC)</td>
</tr>
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You are Invited!

LEPC/TERC Emergency Planning and Response Conference

July 20-22, 2017
Doubletree Hotel, Overland Park, KS
www.regonline.com/2017LEPCTERC

Tracks include: Industry, transportation, hazmat, LEPC basics, case studies

Contact Patricia Reitz (reitz.patricia@epa.gov) or Terri Blunk (blunk.terri@epa.gov) for more information
Resources

• EPA’s Emergency Planning and Community Right-to-Know Act (EPCRA) website: https://www.epa.gov/epcra

• EPA Risk Management Program website: https://www.epa.gov/rmp

• EPA Emergency Response website: https://www.epa.gov/emergency-response

• The Right to Know Network website: http://www.rtknet.org/db/rmp
For More Information
Region 7’s CAA 112(r) and EPCRA non-313 Contacts

Jodi Harper, Today’s Presenter, 913-551-7483, harper.jodi@epa.gov

Patricia Reitz, EPCRA non-313 & CAA 112(r) Program Coordinator,
913-551-7674, reitz.patricia@epa.gov

Terri Blunk, Outreach Coordinator, 913-551-7013, blank.terri@epa.gov

State Coordinators

• Iowa:  Krystal Stotts, stotts.krystal@epa.gov, 913-551-7946
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