



# 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](mailto:hensley.dave@epa.gov), 913-551-7768
  - **Iowa:** Krystal Stotts, [stotts.krystal@epa.gov](mailto:stotts.krystal@epa.gov), 913-551-7946
  - **Nebraska:** Terri Blunk, [blunk.terri@epa.gov](mailto:blunk.terri@epa.gov), 913-551-7013
  - **Kansas:** Fatima Ndiaye, [ndiaye.fatimatou@epa.gov](mailto:ndiaye.fatimatou@epa.gov), 913-551-7383
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- Compliance assistance for industry
  - Assists Local Emergency Planning Committees (LEPCs) and the State Emergency Response Commission (SERC)



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## Other Region 7 Federal Contacts

Department of Homeland Security  
Chemical Facility Anti-Terrorism Standards (CFATS)

David Martak; [David.Martak@HQ.DHS.GOV](mailto:David.Martak@HQ.DHS.GOV); 202-617-0984

Department of Labor (DOL) / Occupational Safety and Health  
Administration (OSHA)

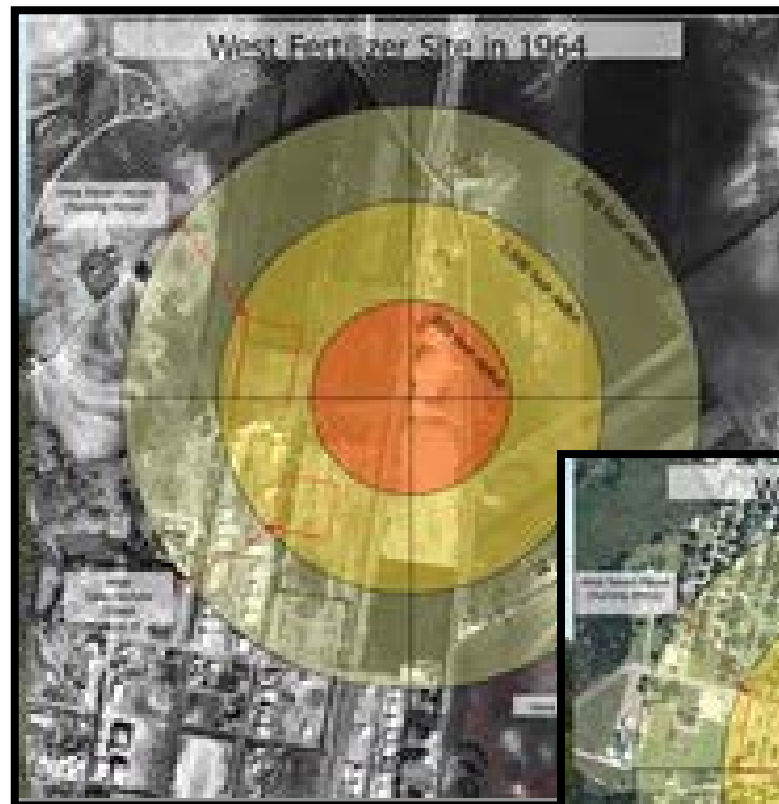
Brian Drake; [drake.brian@osha.gov](mailto:drake.brian@osha.gov); 816-502-9011



## 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 19<sup>th</sup>, 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 19<sup>th</sup>, 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:  
<https://emergencymanagement.zendesk.com/hc/en-us/sections/203878207-Final-Amendments-to-RMP-Rule>



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## Risk Management Program Chosen for National Enforcement Initiative (NEI)

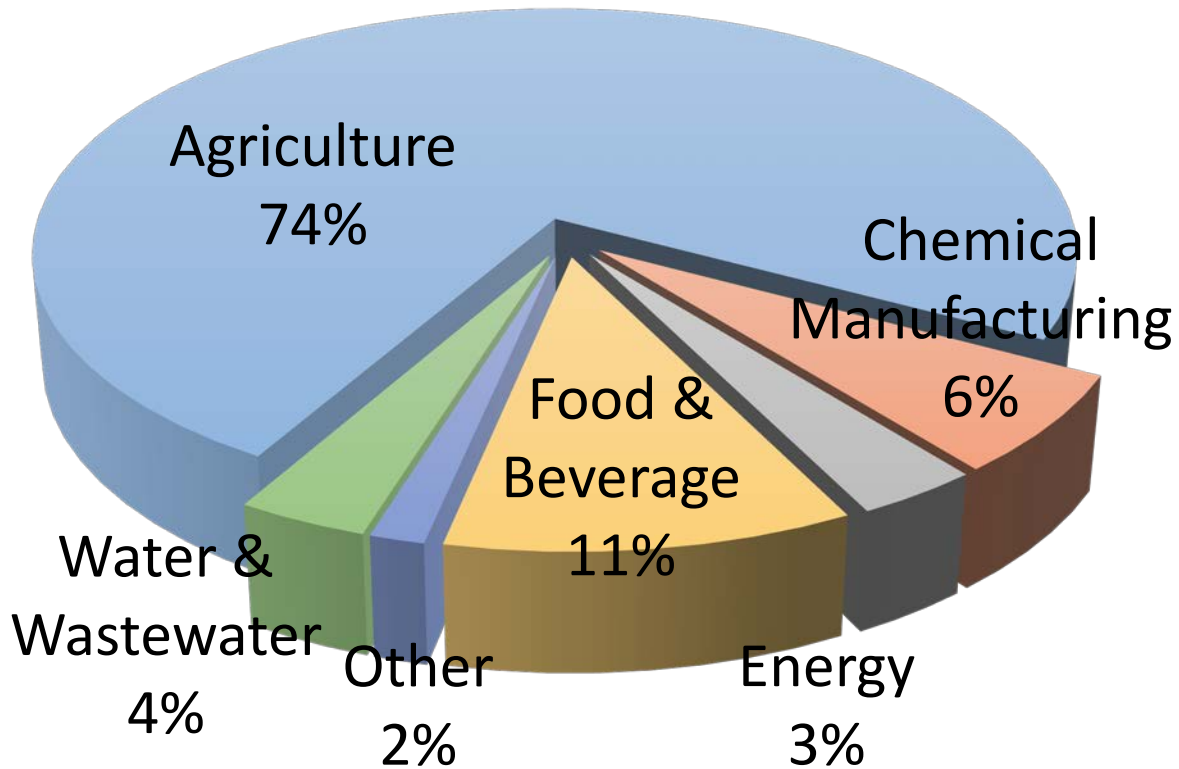
- October 2016-September 2019
- Greater emphasis on outreach and enforcement
- Ammonia refrigeration chosen as one of the priority sectors



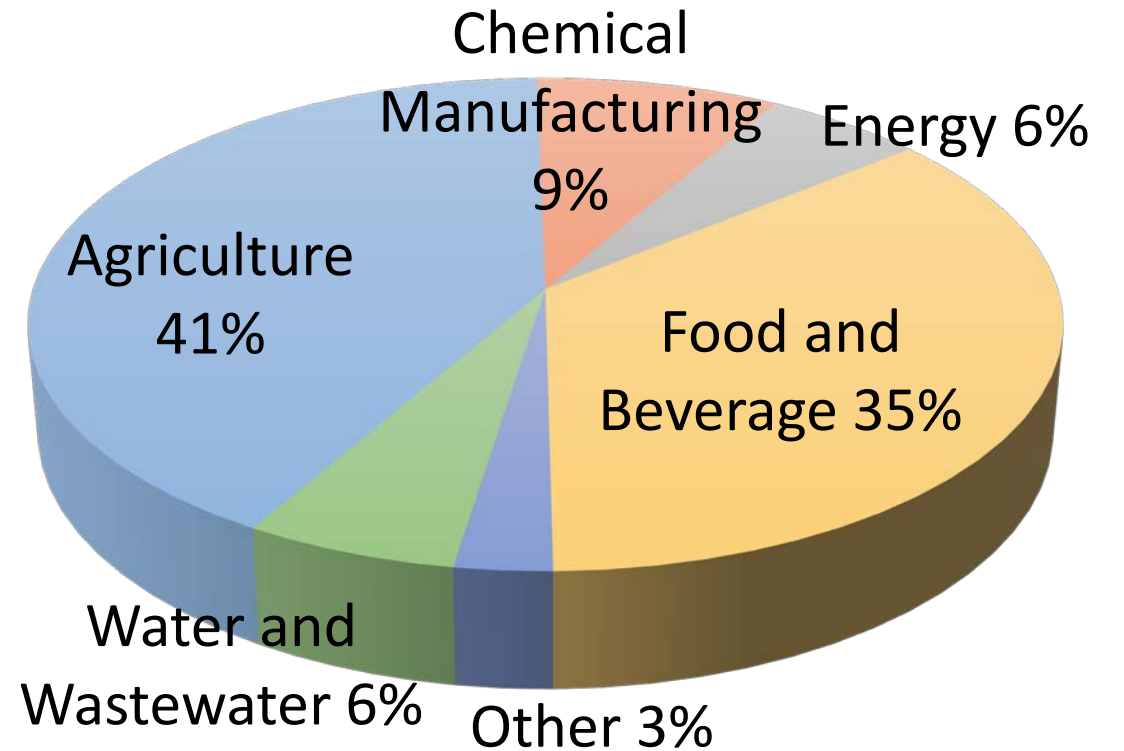


# Region 7 Risk Management Program Facilities and Accidents

## Facilities

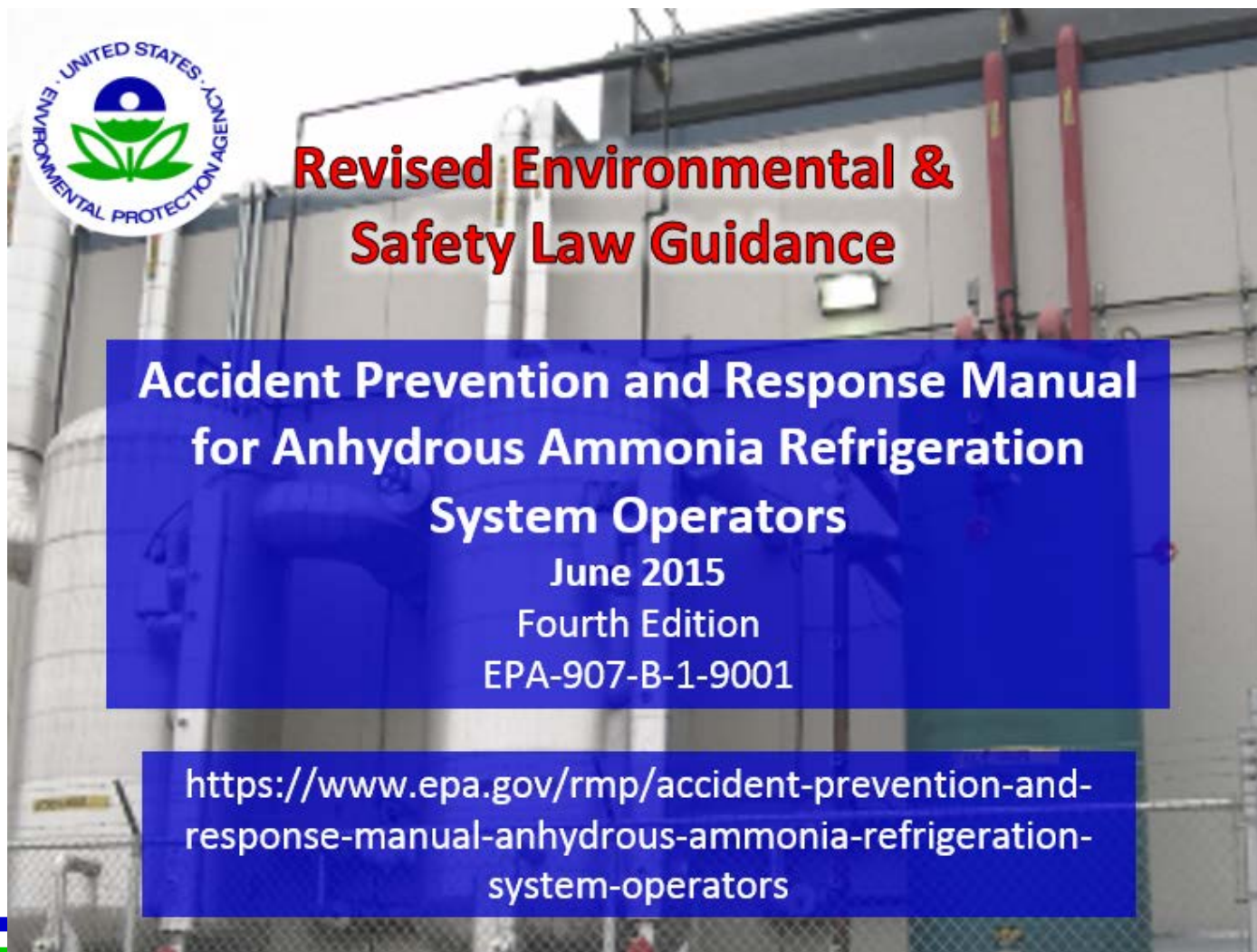


## RMP Reported Accidents





# 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

**Less than 10,000 pounds**

General Duty Requirements  
CAA 112(r)(1)

**10,000 pounds or more**

Risk Management Program  
Requirements  
CAA 112(r)(7)



## 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



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# 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)





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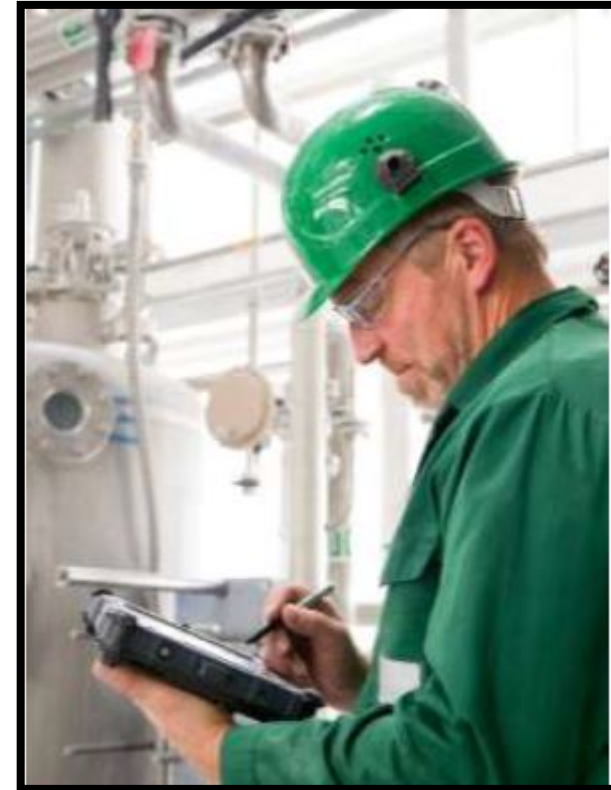
## Notification of Inspection

**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](http://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't use 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



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## 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

|         | EPCRA 304 / CERCLA 103 Release  | CAA 112(r) Accident   | CAA 112(r) Incident Investigation   |
|---------|---|---|---|
| Trigger | Reportable quantity   | <ul style="list-style-type: none"> <li>No reportable quantity</li> <li>Involves a regulated substance from a covered process resulting in specified consequences</li> </ul>                             | Any incident that resulted in or had the potential to result in a catastrophic release. Could include <ul style="list-style-type: none"> <li>EPCRA reportable releases</li> <li>RMP reportable accidents</li> <li>Event where nothing was released</li> </ul> |
| Notes   | <p>Call</p> <ul style="list-style-type: none"> <li>Local Emergency Planning Committee</li> <li>State Emergency Response Commission</li> <li>National Response Center</li> </ul> | <p>Considers consequences</p> <ul style="list-style-type: none"> <li>Deaths, injuries, hospitalization, property damage</li> <li>Off-site shelter-in-place, evacuation, environmental damage</li> </ul> | Determine causes and complete follow-up to prevent recurrence   |
| When    | Within 15 minutes   | Update RMP within 6 months  | Start within 48 hours   |





# 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?



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2d Session

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Vol. 2

A LEGISLATIVE HISTORY OF THE SUPERFUND  
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TOGETHER WITH

A SECTION-BY-SECTION INDEX

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# Why 15 Minutes?



One problem that has emerged, however, is that notification of the National Response Center may not be relayed quickly enough back to the state and local authorities who must provide the first line of emergency response.

Prompt notification of state and local emergency response officials to the release of certain hazardous substances. This requirement applies to any release of a hazardous substance with a reportable quantity established under section 102. This requirement also applies to releases of any other hazardous substance that determined by the President by regulation require emergency responses.

Section 103(b) of the Act is also amended to increase the penalties for failure to report to a major release. For a first or second conviction is a fine of up to \$25,000, or imprisonment for up to two years, or both. In addition, the maximum fine for falsification of records under section 106 is increased to \$10,000.

The reported bill adds a new subsection establishing an administrative civil penalty for failure to provide timely notification under subsections (a) and (b). The penalty is assessed, at not more than \$10,000 for a first violation by the same person, and \$75,000 for a fourth or subsequent violation. The penalty may be assessed by the President after a hearing. District court review of

DISCUSSION

Section 103(a) of CERCLA requires a person in charge of a vessel or facility to notify the National Response Center if the person in charge has knowledge of a release of a hazardous substance in an amount that equals or exceeds the reportable quantity established under section 102. These notifications serve as one basis for the Federal Government to determine whether re-

to report. This amendment increases the criminal penalty and allows the administrative imposition of civil penalties. Administrative civil penalties for violations of notification requirements have

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.

are those that manufacture a hazardous substance or store 6,000 kilograms or more of a hazardous substance, and have ten or more full-time employees.

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 1<sup>st</sup>, 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>

| Physical Hazards<br>(prior to GHS adoption) | Physical Hazards<br>(after adoption, revised 2012) |
|---|--|
| Combustible Liquid                          | Flammable (gases, aerosols, liquids, or solids)    |
| Compressed Gas                              | Gas under pressure                                 |
| Explosive                                   | Explosive  |
| Flammable                                   | Self-heating                                       |
| Pyrophoric                                  | Pyrophoric (liquid or solid)                       |
| Oxidizer                                    | Oxidizer (liquid, solid or gas)                    |
| Organic Peroxide                            | Organic peroxide                                   |
| Unstable (Reactive)                         | Self-reactive                                      |
| Water-Reactive                              | In contact with water emits flammable gas          |
|   | Corrosive to metal                                 |
|   | Hazard Not Otherwise Classified (HNOC)             |

| Health Hazards<br>(prior to GHS adoption)                      | Health Hazards<br>(after adoption, revised 2012)             |
|--|--|
| Carcinogens  | Carcinogenicity  |
| Toxic or highly toxic agents                                   | Acute toxicity (any route of exposure)                       |
| Reproductive toxins  | Reproductive toxicity  |
| Irritants; Corrosives  | Skin Corrosion or Irritation                                 |
| Sensitizers  | Respiratory or Skin Sensitization                            |
| Agents which damage the lungs, skin, eyes, or mucous membranes | Serious eye damage or eye irritation                         |
| Hepatotoxins   | Specific target organ toxicity (single or repeated exposure) |
| Nephrotoxins   | Germ cell mutagenicity                                       |
| Neurotoxins  | Aspiration hazard  |
| Agents which act on the hematopoietic system                   | Hazard Not Otherwise Classified (HNOC)                       |



You are Invited!

# LEPC/TERC Emergency Planning and Response Conference

July 20-22, 2017

Doubletree Hotel, Overland Park, KS

[www.regonline.com/2017LEPCTERC](http://www.regonline.com/2017LEPCTERC)



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

Contact Patricia Reitz ([reitz.patricia@epa.gov](mailto:reitz.patricia@epa.gov)) or Terri Blunk ([blunk.terri@epa.gov](mailto:blunk.terri@epa.gov)) for more information





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## 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>



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## 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](mailto:harper.jodi@epa.gov)

**Patricia Reitz**, EPCRA non-313 & CAA 112(r) Program Coordinator,  
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