# Risk Management Plan (RMP) Program


Risk Management Plan (RMP) Program

# History of RMP Program

## Union Carbide, Bhopal, India

- Dec. 3, 1984 release of methyl isocyanate
  - 40 tons of toxic gas released
    - 3,800 deaths
    - 11,000 disabilities

## Institute, West Virginia

- August 11, 1985 release of aldicarb oxime
  - Approximately 150 people hospitalized

# History of RMP Program

- Congress enacted the Emergency Planning and Community Right-to-Know Act of 1986
- OSHA developed Process Safety management Program (1992)
- Accidental Release Prevention (RMP Program)
  - Signed into law Nov 15, 1990 as part of the CAA Amendments of 1990
  - Final regulations published by USEPA (June 1996)
  - List rule published (January 1994)

# RMP Program

- Identifying hazards that may result from accidental releases using appropriate hazard assessment techniques;
- Designing, maintaining and operating a safe facility; and
- Minimizing the consequences of accidental releases, if they do occur.

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# RMP Program

- Beginning June 21, 1999, subject facilities were required to prepare and execute an RMP program
  - Submit a Risk Management Plan
    - A report that details the facility's prevention program, emergency response program, and hazard assessment
  - Hazard assessment
    - Worst case and alternative release
  - Prevention program
    - Detect, prevent, and minimize accidental releases
  - Emergency response program
    - Protect human health and the environment in the event of an accidental release

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# RMP Program Applicability

- To determine a facility's applicability:
  - Review list rule
    - 77 toxic substances
    - 63 flammable substances
  - Determine amount of chemical
    - Toxics:  500 lbs. to 20,000 lbs.
    - Flammables:  10,000 lbs.
  - Identify process
    - Includes storage, handling, processing, etc.

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# RMP Program Applicability

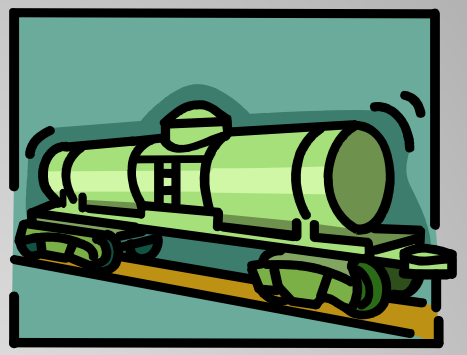
- Most common regulated substances:
  - Anhydrous ammonia
    - Ammonia retailers
    - Refrigeration (warehouse and manufacturing)
  - Chlorine
    - WTP / WWTP
    - Chemical warehouses
  - Propane, butane, pentane and flammable mixtures
    - Refineries
    - Natural gas liquid extraction
    - Aerosol can filling
  - Ammonia (conc. 20% or greater)
    - Agricultural
  - Sulfur dioxide
  - Formaldehyde
  - Hydrogen
  - Hydrogen fluoride

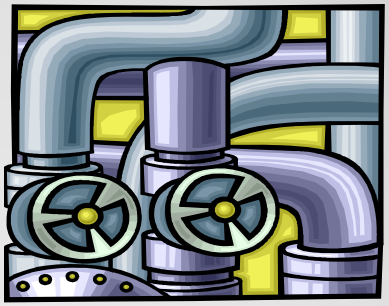
# RMP Program Applicability

- Process:
  - Any activity involving a regulated substance, including any use, storage, manufacturing, handling, or on-site movement, or any combination of these activities
  - Any group of vessels that are interconnected or separate vessels that are located such that a regulated substance could be involved in a potential release

# RMP Program Applicability

- Examples of processes
  - Storage tanks
  - Cylinders
  - Drums
  - Railcars
  - Interconnected vessels
  - Cans





# RMP Program Applicability

- Exemptions
  - Farmers with anhydrous ammonia (for their own use)
  - Flammable substances used as fuel or held for sale as fuel at a retail facility
  - Chemicals in transportation, including incident to transportation
  - Regulated substances contained in articles

# General Duty Clause

- What is the GDC?
  - 112(r)(1) CAA Amendments of 1990
  - Required to comply since 1990
  - Makes the owners/operators of facilities that have regulated and other extremely hazardous substances responsible for ensuring that their chemicals are managed safely.
- Who is covered?
  - Applies to any stationary source producing, processing, handling or storing regulated substances or other extremely hazardous substances.

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# General Duty Clause

- How to meet GDC obligations
  - Adopt or follow relevant industry codes, practices or consensus standards.
  - Be aware of unique circumstances of your facility.
  - Be aware of accidents and other incidents in your industry.

- Regulated at Federal level (OSHA & EPA)
  - CAA Section 113(b) allows penalties of up to $37,500 per day for each violation.

# RMP Program

- Submit a plan to U.S. EPA (and Ohio EPA, if applicable)
  - Registration info
  - Hazard assessment
  - RMP reportable accidents
  - Prevention program implementation dates
  - Emergency response activities
- Implement
  - Prevention program
  - Emergency response program
    - Coordinate with emergency responders

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# Hazard Assessment

- Worst case release scenario
  - Greatest distance to endpoint
    - Greatest amount held at anytime in a single vessel/pipe
    - Smaller quantities held at higher process temperature/pressure
    - Proximity to the boundary
    - Administrative controls
  - One for toxic substance (endpoint specified by rule)
  - One for flammable substance (1 psi overpressure)
  - Additional scenarios if different public receptors

# Hazard Assessment

- Alternative release scenario
  - More likely to occur
  - Should reach an endpoint offsite
  - Owner / operator specifies parameters
  - One for each regulated toxic
  - One to represent all flammables
  - May consider active & passive mitigation
  - Consider
    - Accident history
    - Scenarios from process hazard analyses

# Hazard Assessment

- RMP includes
  - Scenarios
    - Distances
    - Estimated population
    - List of public & environmental receptors

- Maintain documentation on-site
  - Assumptions from modeling
    - Size of tank, release rate, mitigation, etc.
  - Supporting documentation for population, public, and environmental receptors
    - Landview print outs
    - Maps

# Prevention Program

- Determine Program Level
  - Program level 1
    - No accidents with off-site consequences
    - Worst case scenario is less than the distance of any public receptors
    - Emergency response procedures coordinated with LEPC and response organizations

*EXAMPLES: warehouse storage (aerosol cans), storage tanks with multiple passive mitigation*

# Prevention Program

- Determine program level
  - Program Level 3
    - Cannot qualify for Program 1
    - Subject to OSHA PSM or specific NAICS codes

    *EXAMPLES: Refineries, ammonia refrigeration, WTP/WWTP, chemical mfrs.*

  - Program Level 2
    - Does not meet eligibility requirements for 1 or 2

    *EXAMPLE: Agricultural retailers*

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| Program 1 | Program 2 | Program 3 |
|---|---|---|
| Certify no additional | Safety Information | Safety Information |
| | Hazard Review | Hazard Review |
| | Operating Procedures | Operating Procedures |
| | Training | Training |
| | Maintenance | Maintenance |
| | Incident Investigations | Incident Investigations |
| | Compliance Audit | Compliance Audit |
| | | Management of Change |
| | | Pre-Startup Review |
| | | Contractors |
| | | Employee Participation |
| | | Hot Work Permits |

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# Ohio EPA RMP Program

- Delegation received January 2000
  - GDC not included
- OAC 3745-104
  - Mirrors Federal regulations (40 CFR part 68)
    - Fees
    - Dual submission requirements
      - Initial RMP
      - Major change
- Audits
  - Offsite
  - Onsite
- Enforcement

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# Ohio EPA RMP Program

- Fees
  - Annual – due Sept. 1
  - $50 registration fee and $200 for each regulated substance
  - $65 for anhydrous ammonia sold for use as an agricultural nutrient
  - $65 for propane if the only RMP regulated chemical on-site
  - Small business exempt from fees
  - Approximately $115K from fees

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# Ohio EPA RMP Program

- RMP audits
  - Audit each facility approximately every 5 years
    - More often if
      - Release(s) of regulated substance
      - Numerous violations
    - New facilities within 12-18 months of submission
    - Approximately 445 facilities
      - Program level 3 – 79%
      - Program level 2 – 20%
      - Program level 1 – 1%

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# Ohio EPA RMP Program

- Most common facilities
  - Agricultural retailers – 19%
  - WTP / WWTP – 16%
  - Ammonia refrigeration – 17%

- Review during audit:
  - Hazard assessment documentation
  - Prevention program documentation (Program 2 & 3)
  - Emergency response plan / program

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# Documentation for RMP audit

- Process safety information / safety information
  - Hazards of the regulated substance(s)
    - MSDS
  - Technology of the process
    - Block flow diagram
    - Safe upper/lower limits, consequences of deviations
  - Equipment in the process
    - P&IDs
    - Relief system design
    - Safety systems

# Documentation for RMP audit

- Process hazard analysis / hazard analysis
  - Required every five years
  - Recommendations from analysis
- Operating procedures
  - Steps for conducting activities associated with the covered process
- Training
  - Sign in sheets
  - Quizzes/tests
  - Refresher training required every three years

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# Documentation for RMP audit

- Mechanical integrity / maintenance
  - Inspections and tests on covered process equipment
    - Pressure vessels/storage tanks
    - Piping systems and components such as valves
    - Relief and vent systems and devices
    - Emergency shutdown systems
    - Controls
      - Monitoring devices and sensors,
      - alarms and interlocks
    - Pumps

# Documentation for RMP audit

- Incident investigation
  - Any incident which resulted in, or could have reasonably have resulted in a catastrophic release of a regulated substance
- Compliance audits
  - Every three years
- Contractors
  - Examples of completed forms
- Emergency response plan or emergency response plan

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# Ohio EPA RMP Program

- After the audit
  - Review deficiencies on-site
  - Ohio EPA provides deficiency letter
  - 30 days for compliance
  - 2nd audit if numerous deficiencies
  - Enforcement
  - Initial audit – compliance assistance

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# Ohio EPA RMP Program

- Enforcement
  - Approximately 45 cases since 2002
  - Issue Findings & Orders
  - Settlements from $2,500 to $60,000
  - Based on:
    - Company size
    - Number of deficiencies
    - Amount of chemicals
    - Time line of non-compliance
    - Risk factors to environment and public receptors

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# Ohio EPA RMP Program

- Enforcement
  - Multiple deficiencies in initial audit and no follow-up with Ohio EPA
  - Not submitting RMP prior to having a regulated substance on site over the threshold
  - Same deficiencies from initial audit
  - Not submitting RMP

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# RMP Program

- Required to resubmit
  - Within five consecutive years of it's initial submission and every 5 years thereafter
  - No later than 3 years after a newly regulated substance is added by U.S. EPA
  - No later than the date on which a regulated substance is first present above the threshold quantity
  - Six months
    - Revised PHA or hazard review
    - OCA – increased / decreased by a factor of two or more
    - Prevention program level change
    - Submit de-registration if no longer subject

# RMP Program

- Required to correct:
  - New accident history information
    - RMP reportable release
    - Within 6 months
  - Emergency contact information
    - Listed in RMP
    - Within one month
  - Resubmit vs. correct
    - Resubmitting restarts five year clock
    - RMP e*Submit

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# RMP Program

- RMP*eSubmit
  - Submission/resubmission
    - Initial RMP
      - Copy to Ohio EPA
    - Five year anniversary
    - Change in process
      - Copy to Ohio EPA
  - Correction
    - Registration information (i.e., facility name change, emergency contact information)
    - Accident history
      - Copy to Ohio EPA
    - Deficiency from an audit

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# RMP Program

- De-register
  - Copy to Ohio EPA
  - Lower threshold
  - Chemical change
  - No longer in business
- Withdrawal
  - Copy to Ohio EPA
  - Flammable fuel exemption

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# RMP Program: RMP*eSubmit

- Central Data Exchange
  - On-line location on U.S. EPA's network
  - Provides standardized and secure information
  - Manages several regulatory and monitoring programs
  - Register certifying official in CDX
    - Must have CDX account
    - http://cdx.epa.gov
  - Complete the ESA and mail to USEPA
  - Register the "Preparer" and activate RMP*eSubmit
    - Certifying official can also be Preparer
    - Prepare requires Authorization Code

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# RMP Program - Guidance

- U.S. EPA website
  - http://www.epa.gov/emergencies/content/rmp/index.htm
    - Industry specific guidance
    - Fact sheets
  - RMP Reporting Center:  703-227-7650
- Ohio EPA website
  - http://www.epa.ohio.gov/dapc/atu/112r/new.aspx
    - Compliance tools
    - Fact sheets
  - Call:
    - Sherri Swihart:  614-644-3594
      - sherri.swihart@epa.ohio.gov
    - Kim Joseph:  614-644-2187
      - kim.joseph@epa.ohio.gov

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# Questions?

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