Risk Management Plan Program

Accidental Release Prevention Program

Ohio Environmental Protection Agency

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 (new coordination requirements)
    - Protect human health and the environment in the event of an accidental release

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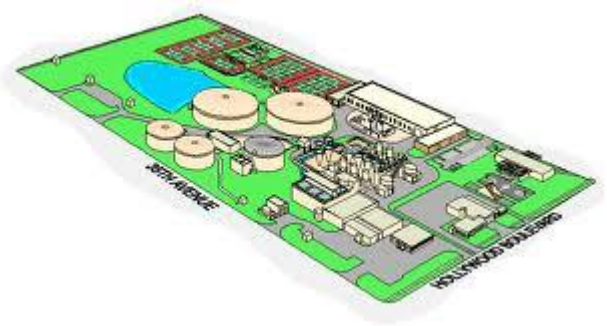
RMP Program Applicability

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



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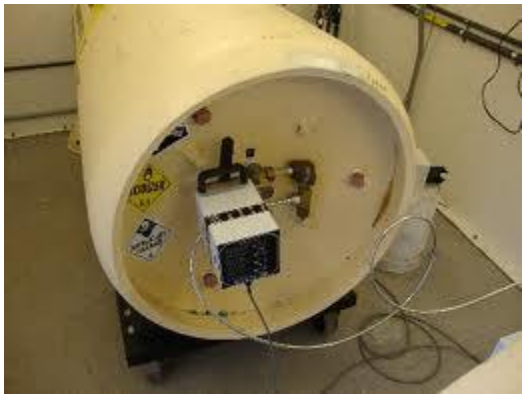
RMP Program Applicability

- Water and wastewater treatment plants
  - Potential RMP chemicals
    - Chlorine * - 2500 lbs
    - Sulfur dioxide – 5000 lbs
    - Ammonia (20% or greater) -20,000 lbs
    - Anhydrous ammonia – 10,000 lbs
  - 10% of RMP affected universe
    - Approximately 40 WTP/WWTPs



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RMP Program Applicability

- For treatment plants (chlorine)
  - more than one 1-ton chlorine cylinder on site
    - Storage
    - Processing
  - Consider colocation of cylinders
  - May use written administrative controls
    - Written procedures to maintain chlorine storage amount below 2,500 lb threshold

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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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RMP Submission

- Required to resubmit or correct:
  - Within five consecutive years of its initial submission and every five years thereafter
  - No later than the date on which a regulated substance is first present above the threshold quantity
  - One month of a change in emergency contact
  - 6 months after an RMP reportable accident

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RMP Submission

- U.S. EPA
  - CDX (RMP*eSubmit)
    - http://www.epa.gov/oem/content/rmp/rmp_esubmit.htm
  - RMP Reporting Center 703-227-7650
- Ohio EPA
  - Hard copy or email
  - Major changes
  - Initial RMPs
  - De-registrations

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Hazard Assessment

- Worst case release scenario
  - Greatest distance to the endpoint
- Alternative release scenario
  - More likely to occur
    - Generally less than distance to the endpoint for worst case
- RMP*Comp
  - http://www.epa.gov/oem/content/rmp/rmp_comp.htm

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RMP*Comp

Back

Errors Found

No errors found

Chemical Information

Chemical Name: Chlorine

CAS Number: 7782-50-5

Chemical Type: Toxic Gas

Worst-case Analysis

Scenario type: (•) Worst-case ( ) Alternative

Physical state:
( ) Unliquefied
( ) Liquefied by refrigeration
(•) Liquefied under pressure

Quantity released: 2000 pounds

Surrounding terrain type:
(•) Urban (many obstacles in the immediate area)
( ) Rural (terrain generally flat and unobstructed)

Mitigation measures

Check the checkbox below if the following mitigation measure is in place in your process.

Release in enclosed space, in direct contact with outside air: [ ]

Submit

Hazard Assessment

- Worst case & alternative release scenario
  - Residential population within the radius (distance to the endpoint)
    - Most recent Census
      - Marplot
      - CAPS
        - » http://mcdc.missouri.edu/applications/caps2010.html
  - Public & environmental receptors
    - Marplot maps

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Hazard Assessment

- Required to maintain documentation on site
  - RMP*Comp (or other model) print outs
  - Calculations for alternative scenario
  - Population data
  - Environmental data
  - Public receptors data

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RMP Prevention Program

- Identify hazards that may result from accidental releases using appropriate hazard assessment techniques
- Design, maintain, and operate a safe facility, and
- Minimize the consequences of accidental releases, if they occur

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Prevention Program

- Process safety information
  - Hazards of the regulated substance
    - SDS
  - Technology of the process
    - Block flow diagram
    - Description of process
      - Include safe upper and lower limits and consequences of deviations

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Prevention Program

- Process safety information (continued)
  - Equipment in the process
    - Materials of construction
    - Piping and instrument diagram (P&ID)
    - Relief system design (relief valves, rupture disks)
    - Ventilation system design (ensure it is up to code)
      - Continuous
      - Emergency
    - Safety systems
      - Alarms (including high/low temperature, pressure, flow)
      - Chlorine detectors

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Prevention Program

- Process hazard analysis
  - Required every five years
  - More often if a major change to process
  - The analysis should include recommendations to improve safety
    - Schedule completion dates for recommendations
  - Include operators
  - Checklist or What-if analysis (see Ohio EPA website) most common

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Prevention Program

- Operating procedures
  - Written steps for each operating phase
    - Offloading containers, switching containers, process startup, shutdown, emergency shutdown, scrubber startup (any procedure affiliated with covered process)
    - Include operating parameters and consequences of deviations
  - Annually certify
  - Ensure procedures readily available to operators

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Prevention Program

- Training
  - Initial training for new operators
  - Refresher training every three years
    - Operating procedures
  - Whenever there is a change in the operating procedures
  - Process change (i.e., switching from liquid to gas feed)
  - Maintain documentation

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Prevention Program

- Mechanical integrity
  - Written procedure for inspections and tests
    - Include all RMP critical equipment
    - Manufacturers recommendations
    - Industry standards
    - May use O&M manuals for equipment
      - Chlorinators
      - Regulators
      - Halogen systems
      - Scrubber

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Prevention Program

- Mechanical integrity (continued)
  - Document inspections and tests
    - Date
    - Employee performing inspection/test
    - Identifier of equipment
    - Description of inspection/test
    - Results of inspection/test
  - Correct deficiencies in equipment

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Prevention Program

- Mechanical integrity (continued)
  - Examples of documentation:
    - Work orders
    - Third party inspections (hoist, overall process, Halogen certifications, calibrations of detectors or other instrumentation)
    - Checklists developed by facility
    - Documentation demonstrating deficiencies in equipment have been corrected

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Prevention Program

- Management of change
  - Procedure to manage modifications not replacement-in-kind
    - Switching gas to liquid feed
    - Addition of scrubber
    - Replace chlorinator (not identical)
- Pre-startup review
  - Procedure to ensure modifications to process are safe

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Prevention Program

- Compliance audits
  - Ensure RMP compliance every three years
- Incident investigation
  - Investigate incidents or near misses

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Prevention Program

- Employee participation
  - Written plan to involve employees with RMP program elements
- Hot work permit
  - Welding on process equipment
- Contractors
  - On or around process
  - Review contractor's safety programs prior to hiring
    - Provide copy of EAP and SDS

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Emergency Response

- USEPA finalized RMP rule amendments (40 CFR part 68)
  - Not yet published in Federal Register
  - Modifying OAC 3745-104 to correlate with USEPA amendments
  - Addresses coordination with emergency responders
  - Tabletop and field exercises
  - Requires a public meeting in the event of an offsite release (RMP reportable)

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Emergency Response New Requirements

- Non-Responding agencies
  - Annual notification drills
    - Confirm emergency contact information is accurate and up to date
    - Five years after FR publication
  - Annual coordination with LEPC and fire departments
    - Effective as of 9/21/2018
    - Must be documented

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Emergency Response New Requirements

- Responding facilities
  - Notification drills (annual)
    - Drill required within five year of FR publication
  - Tabletop exercises (at least once every three years)
    - First exercise required within 7 years of date of Federal Register
  - Field exercises
    - Work with local agencies to determine frequency
      - Have plan within four years of FR publication

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Facility Public Meeting
New requirement

- Public meeting is required to be held after an incident that has offsite impacts
  - No onsite impacts
  - Only RMP regulated substances
  - Required for any releases after March 15, 2021

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Ohio EPA RMP Program

- Received delegation from USEPA January 2000
- Ohio EPA responsible for:
  - Rule development
  - Audits
  - Fees ($250/year for most treatment plants)
  - Enforcement
  - Guidance
  - Training

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Ohio EPA RMP Program

- Audits
  - Every five years
  - 1 – 2 weeks notice
  - 2-4 hours
  - Send checklist
- After the audit
  - Review violations
  - Notice of Violation
    - Resolution of Violation
  - Letter of Compliance
  - Enforcement

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Ohio EPA RMP Program

- Guidance
  - U.S. EPA website
    - http://www.epa.gov/oem/guidance.htm#rmp
  - Ohio EPA website
    - https://www.epa.state.oh.us/dapc/atu/112r#164219494-water-and-wastewater-treatment-plants-industry-specific-guidance-Chlorine specific guidance documents
  - The Chlorine Institute
  - American Water Works Association

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Questions?

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