

2016 Compliance Assistance Conference

Risk Management Plan (RMP)
Program

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History of RMP Program



- Union Carbide
 - Bhopal, India
 - Dec. 3, 1984 release of methyl isocyanate (MIC)
 - 42 tons of toxic gas released
 - » 3,800 deaths
 - » 3,900 permanently disabled
 - » 558,000 injured

Bhopal, India Incident

- Root cause
 - Inferior safety controls due to design
 - Shortage of experienced workers (layoffs)
 - Refrigeration to MIC tank was shut off (save money)
 - Corroded pipe on flare tower not replaced
 - No caustic tower for neutralization
 - Stored MIC in large tanks beyond recommended levels
 - Failure of multiple safety systems (poor maintenance)

Risk Management Plan Intent

- Facilities that produce, process, distribute, or stores certain chemicals must develop and report to EPA an **accident prevention plan** that includes, but not limited to, hazard assessment, prevention history, and an emergency response plan.
- Goal is to maintain a safe facility that takes steps to prevent/reduce releases and to minimize the consequences of an accidental release which do occur.

Risk Management Plan (RMP)

- Clean Air Act of 1990 (Section 112(r))
- 40 CFR Part 68
- ORC Chapter 3753
- OAC 3745-104

- June 21, 1999 initial RMP due to the U.S. EPA
 - 404 +/- RMP facilities in Ohio
 - 5-year reporting cycle/updates

- Ohio EPA received delegation (13 total) of the RMP program in January 2000
 - Ohio EPA began auditing subject facilities
 - Kimberly Joseph and Sherri Swihart are the Ohio EPA RMP auditors

RMP Chemicals

- 40 CFR Part 68, Section 68.130 contains the List of Toxic Chemicals (77) and Flammables (63).
- USEPA's "List of Lists"
 - Consolidated listing of chemicals subject to EPCRA and RMP is a reference tool.
 - <http://www.epa.gov/epcra/epcracerclacaa-ss112r-consolidated-list-lists-march-2015-version>

RMP Toxic Chemicals Examples

- 500 pounds (Hydrogen Selenide & Phosgene)
- 1,000 pounds (Nickel Carbonyl & Fluorine)
- 2,500 pounds (**Chlorine** & Hydrocyanic Acid)
- 5,000 pounds (Sulfur Dioxide & Hydrogen Chloride- both in anhydrous form)
- 10,000 pounds (**Anhydrous Ammonia** & Ethylene Oxide)
- 15,000 pounds (Formaldehyde & Hydrochloric Acid)
- 20,000 pounds (Methyl Thiocyanate)

RMP Flammables

- 10,000 pounds thresholds

- Examples include:

Propane

Vinyl Chloride

Isobutene

Ethyl Chloride

Methane

Methyl Ether

Ethylene

Isoprene

Acetaldehyde

RMP Regulation

What facilities are covered?

- 404 +/- RMP reporting facilities in Ohio that include
 - Agricultural retailers
 - Water and wastewater treatment plants
 - Food businesses and refrigerated warehouses
 - Chemical distributors
 - Manufacturers of plastics, resins, and organic chemicals
 - Petroleum refineries and gas processing plants
 - Manufacturers of inorganic chemicals and industrial gases
 - Pulp and paper mills

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

Subjectivity to a Program

- A facility (called a stationary source in the regulations) is covered by the RMP regulation if:
 - It has a regulated substance (77 toxic substances/63 flammables)
 - over the threshold quantity
 - in a process

www.epa.ohio.gov/dapc/atu/112r.aspx

Exemptions to Program

- Farmers using ammonia as a fertilizer
- Flammable substances used as fuel or held for sale as a fuel at a retail facility; which is defined as more than ½ of the income is obtained from direct sales to end users or at which more than ½ of fuel sold by volume, is sold through a cylinder exchange program.
- Chemicals in transportation, including storage incident to transportation
- Laboratory chemicals
- Regulated substances contained in articles

Process

- A process is 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, is considered a process.

Program 1: Processes which would not affect the public in case of a worst- case release and no accidents with specific offsite consequences within last 5 years.

- Limited hazard assessments requirements and minimal prevention and emergency response requirements.

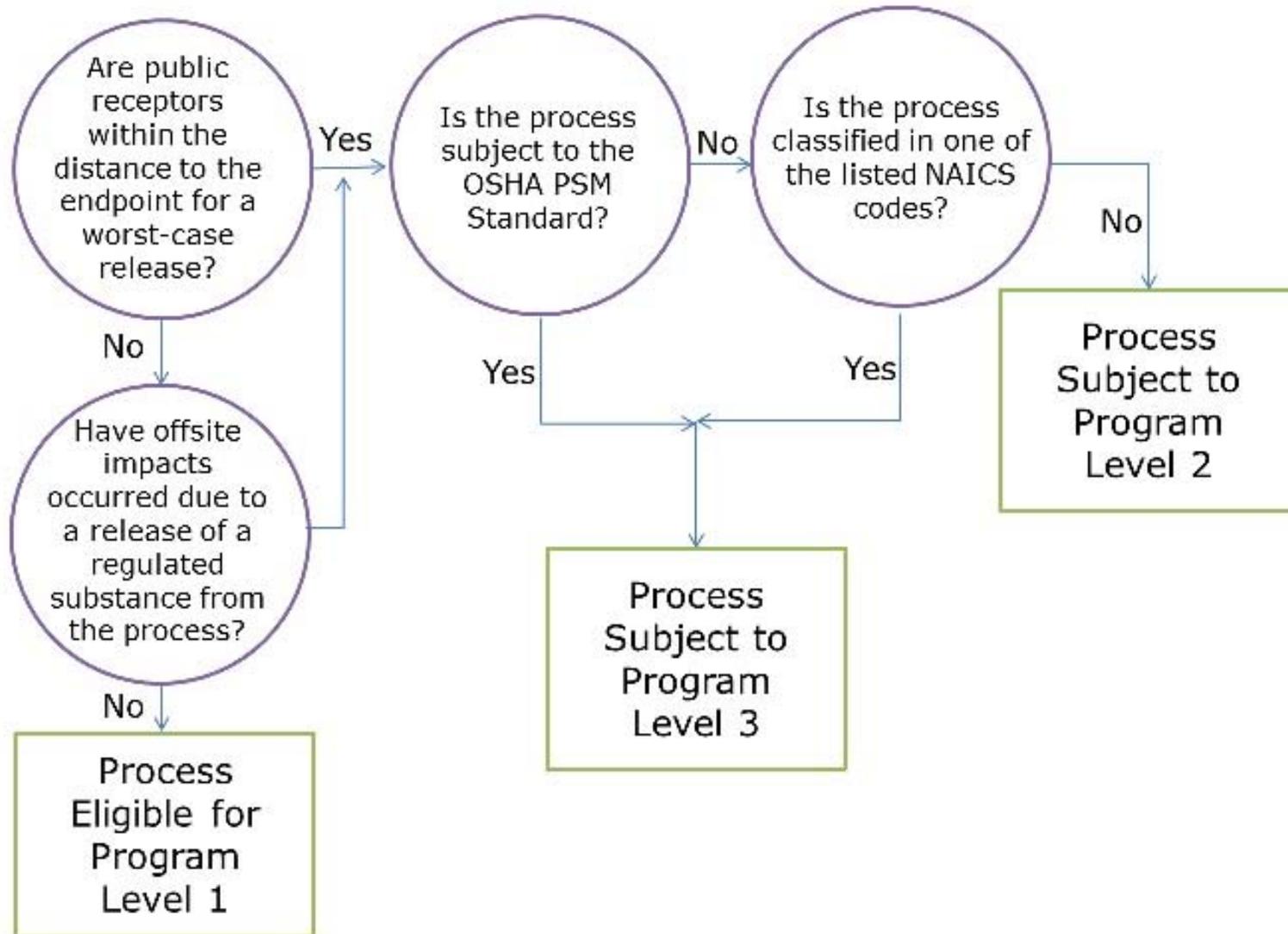
Program 3: Processes not eligible for Program 1 and either subject to OSHA's PSM standard or classified in one of 10 specific NAICS codes.

OSHA Process Safety Management (29 CFR 1910.119)

- Set of procedures in 13 management areas designed to protect worker health and safety.
- Program 3 elements virtually identical to PSM standard requirements.

Program 2: Processes not eligible for Program 1 or subject to Program 3.

- Streamlined prevention program requirements with additional hazard assessments, management and emergency response requirements.



NAICS Codes Industry

- 32211 Pulp mills
- 32411 Petroleum refineries
- 32511 Petrochemical manufacturing
- 325181 Alkalies and chlorine manufacturing
- 325188 All other basic inorganic chemical manufacturing
- 325192 Cyclic crude and intermediate manufacturing
- 325199 All other basic organic chemical manufacturing
- 325211 Plastics material and resin manufacturing
- 325311 Nitrogenous fertilizer manufacturing
- 32532 Pesticide and other agricultural chemical manufacturing

What Program?

Chemical distribution facility stores isopropylamine in 55-gallon drums inside a warehouse; 80 total drums close to one another; and 10,000 pound RMP threshold is exceeded.

1. Warehouse located 50 yards inside facility line
2. Nearest public receptor is 100 yards from fence line
3. Distance endpoint for worst case scenario release from single drum equals 88 yards

Answer: Program 1 (no public receptor within endpoint distant of worst case scenario and no accidental releases of isopropylamine resulting in offsite impact6s in last 5 years)

What Program?

An agricultural retailer located in commercial area has a 200-ton tank of anhydrous ammonia and an 18,000-gallon propane tank. Retailer unloads both chemicals from bulk tanks into smaller tanks then transported to farms. The facility is within 0.15 mile of residences and downtown.

1. Facility has one covered process: the 200-ton tank of ammonia
2. Propane not subject; flammable fuel for sale by retailer.
3. Worst case analysis potentially impacts residences and downtown.
4. Facility not subject to OSHA PSM
5. Ammonia storage not one of listed NAICS codes

Answer: Program 2.

What Program?

A bulk products terminal has co-located petroleum tanks containing 10,000,000 pounds of a regulated flammable in one area, and co-located chemical tanks containing 500,000 pounds of toluene diisocyanate in another area. Facility is within 0.2 miles of another industrial facility.

1. The facility has two covered processes: flammable mixture tank (Process A) and the toluene diisocyanate tanks (Process B).
2. Worst case scenario analysis finds Process A will potentially impact adjacent industrial facility, but Process B will have no offsite impact receptors
3. Process A is subject to OSHA PSM, but Process B is not.

Answer: Facility is subject to both Program 3 (Process A) and Program 1 (Process B).

RMP Contents

- Offsite Consequence Analysis
- Worst Case Scenario - The potential total release of vessel closest to the boundary with the greatest offsite distance to the endpoint
- Alternative Release Scenario - more probable release that should reach offsite (unless no such scenario exists).

RMP Content Continued

- **Prevention Program**

- Safety precautions and maintenance, employee training, internal compliance audits, monitoring and accident history

- **Five-Year Accident History**

- **Emergency Response**

- Health care, employee training measures and procedures for informing the public, response agencies, and hospital

Program Levels RMP Content

PROGRAM 1	PROGRAM 2	PROGRAM 3
Management	Management	Management
Hazard Assessment	Hazard Assessment	Hazard Assessment
	Safety Information	Process Safety Information
	Hazard Review	Process Hazard Review
	Operating Procedures	Operation Procedures
	Training	Training
	Maintenance	Mechanical Integrity
		Management of Change
		Pre-startup Review
	Compliance Audit	Compliance Audit
	Incident Investigation	Incident Investigation
		Employee Participation
		Hot Work Permit
		Contractors
Emergency Response Plan	Emergency Response Plan	Emergency Response Plan

E-Submit Reporting

- In 2009, RMPs were submitted online using system called “RMP*eSubmit”
 - It is a secured on-line database tool for reporting and replaces the old RMP reporting system.
 - It can access your RMP on-line anytime and it’s **FREE!!!!!!**

RMP*eSubmit

- View the current version of RMP
- Create new RMP on-line
- Make corrections to, or create a new resubmission
- Help screens to assist in reporting properly
- Must register as a preparer and/or certifier in the CDX-RMP Program to use.
- www.cdx.epa.gov/epa_home.asp
- <http://www.epa.gov/rmp/rmpesubmit>
- <http://cdx.epa.gov/>
- 888-890-1995

RMP*eSubmit

- RMP Facility ID# from USEPA Reporting Center
- 12 digit number
- EPA Reporting Center 703-227-7650
- RMPPRC@epacdx.net

Ohio EPA RMP Program

- RMP Reporting Facilities
 - Approximately 404 +/- facilities
 - Program level 3 – 79%
 - Program level 2 – 20%
 - Program level 1 – 1%
- Most common facilities
 - Agricultural retailers – 19%
 - WTP / WWTP – 16%
 - Ammonia refrigeration – 17%

RMP Logistics

1. Facility electronically submits its RMP Registration utilizing the RMP eSubmit software
2. USEPA mails out 5-year anniversary reminders and 30-day late notice to RMP facilities
3. Ohio EPA receives copy of reminder letters. Ohio EPA to implement notification as well.
4. Ohio EPA reviews the RMP submitted by facility prior to inspection/audit.
5. Goal is to inspect facility every 5 years.
6. Ohio EPA utilizes “on-site risk management audit checklist” based on the program level of the facilities process(es).

RMP Logistics cont.

7. Ohio EPA creates either notice of violation or letter of compliance within 2 weeks of the visit seeking further documentation and/or action based on findings.
8. Ohio EPA works with facility seeking compliance with OAC 3745-104.
9. Most facilities come into compliance based on site inspection/visit.
10. About 1 out of 20 inspections result in enforcement proceedings.

Ohio EPA RMP Audits

- Audit each facility at least every 5 years
 - Review supporting documentation for hazard assessment & prevention program
 - Issue notice of violation letter to facility
 - Submit missing documentation to Ohio EPA
 - Follow-up inspection
 - Enforcement if needed

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

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

Ohio RMP Program

- Audits/Inspections:
 - 2013- 84.....73 deficiency letter's issued
 - 2014- 70..... 62 deficiency letter's issued
 - 2015- 75..... 69 deficiency letters issued
 - 2016- 67(to date).....58 NOV's issued
- Enforcement
 - 2013- 14 cases16 facilities
 - 2015- 16 cases7 facilities

Common RMP Violations

- Not completing the recommendations from the process hazard analysis.
- Not annually reviewing the operating procedures
- Not conducting refresher training every three years.
- Not implementing a regular scheduled preventative maintenance program according to API standards.
- Not maintaining a contractor program

Annual RMP Fee Schedule

- Invoices sent out in August every year
 - \$50 initial registration fee for facility
 - \$65 for propane; if it is the only regulated substance on site
 - \$65 for anhydrous ammonia sold for use as an agricultural ingredient
 - \$200 for all other regulated substances

Small Business Fee Exemption

- Facilities that meet the definition of a “small business” (independently owned and operated with less than 100 full-time employees) are exempt from fees.
- If you are not sure whether your facility meets
- this definition, call the Small Business Assistance Program at (614) 644-4830.

Increased Attention on RMP

- News media and public information requests have increased.
 - Example Headlines:
 - “Area companies say steps taken to reduce risks”
 - “Ammonia, Chlorine Gases at Power Plants Hazardous if Released”
- Facility contacts should be prepared to answer questions regarding their RMP reports.

Additional information

U.S. EPA website

<http://www.epa.gov/rmp>

Ohio EPA website

<http://www.epa.ohio.gov/dapc/atu/112r.aspx>

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Questions?