

FEDERAL OVERVIEW

FALLOUT FROM EO 13650

Executive Order (EO)
13650 - *Improving
Chemical Facility Safety
and Security on August
1, 2013.*

FEDERAL INTERAGENCY
WORKING GROUP :

- DHS
- OSHA
- EPA
- DOT
- ATF
- DOJ
- USDA

TOPICS

- EPA
 - 2016 Proposed Rule Changes Risk Management Plan (RMP)
 - Clean Air Act (CAA) General Duty Clause (GDC)
- OSHA Process Safety Management (PSM)
 - 2016 Policy Change on Applicability Determinations
 - 2016 Clarification of Safety Management RAGAGEP
- EPA & OSHA
 - 2015 Chemical Safety Alert *Safer Technology and Alternatives*
 - 2016 Fact Sheet *The Importance of Root Cause Analysis During Incident Investigation*

RMP Statistics

In the last 10 years, RMP data show that there have been more than **1,500 reportable accidents**, about 500 of which had off-site impacts. These accidents are responsible for nearly **60 deaths**, some **17,000 people were injured** or who sought medical treatment, almost 500,000 people evacuated or sheltered-in-place and more than **\$2 billion in property damages**.

Source: *EPA ACTIVITIES UNDER EO 13650: Proposed Changes to the Risk Management Program (RMP) Rule Questions & Answers, Feb 2016*

EPA RMP PROPOSAL - 2016

- *Third Party Audits*
 - *After RMP reportable accident to use an independent third party to conduct its next scheduled audit.*
- *Incident Investigations and Root Cause Analysis*
 - *Incident investigation after any incident that resulted in or could have resulted in a catastrophic release.*
 - *Identify the root cause and submit a report.*
- *Safer Technology Alternatives Analysis*
 - *Program 3 facilities in **paper** manufacturing, **coal and petroleum products** manufacturing, and **chemical** manufacturing required to evaluate safer technology and alternatives when conducting the process hazard assessment already required by the current RMP rule.*

EPA RMP PROPOSAL - 2016

- *Local Coordination*
 - *Annual coordination with LEPCs to clarify response needs, emergency plans, roles, and responsibilities.*
- *Emergency Response Exercises*
 - *Annual tabletop emergency response exercises with a field exercise every 5 years.*
 - *All facilities would perform annual notification exercises.*
- *Information Sharing to LEPC's*
 - *Incident Investigation Reports,*
 - *Summary of inherently safer technology adopted according to a Safer Technology Alternatives Analysis*
 - *Emergency response exercise reports.*

OSHA's New PSM Enforcement Policy: July 18, 2016

To better address the hazards associated with mixtures of Appendix A High Hazard Chemicals (HHCs), OSHA hereby rescinds the maximum commercial grade or pure (chemical) grade policy and adopts a one percent test similar to that adopted by EPA.

OSHA's New PSM Enforcement Policy: the One Percent Test

In determining whether a process involves a chemical (whether pure or in a mixture) at or above the specified threshold quantities listed in Appendix A, the employer shall calculate:

- (a) the total weight of any chemical in the process at a concentration that meets or exceeds the concentration listed for that chemical in Appendix A, and

OSHA's New PSM Enforcement Policy: the One Percent Test

- b) with respect to chemicals for which no concentration is specified in Appendix A (126 of 137), the total weight of the chemical in the process at a concentration of one percent or greater. However, the employer need not include the weight of such chemicals in any portion of the process in which the partial pressure of the chemical in the vapor space under handling or storage conditions is less than 10 millimeters of mercury (mm Hg). The employer shall document this partial pressure determination.

OSHA PSM CLARIFICATION

May 11, 2016

RAGAGEP = **R**ecognized
and **G**enerally **A**ccepted
Good **E**ngineering **P**ractices

Background on RAGAGEP for PSM

- The PSM Standard, 29 CFR 1910.119, directly references or implies the use of RAGAGEP in three provisions:
 - **(d)(3)(ii)**: Employers must document that all **equipment** in PSM-covered processes complies with RAGAGEP;
 - **(j)(4)(ii)**: **Inspections and tests** are performed on process equipment subject to the standard's mechanical integrity requirements in accordance with RAGAGEP; and
 - **(j)(4)(iii)**: Inspection and test **frequency** follows manufacturer's recommendations and good engineering practice, and more frequently if indicated by operating experience.

Clarifications of RAGAGEP

- When the design codes, standards, or practices used in the design and construction of **existing equipment** are no longer in general use, the **employer must determine and document** that the equipment is designed, maintained, inspected, tested, and operating in a safe manner.
- As used in the PSM standard, RAGAGEP apply to process equipment design and maintenance; inspection and test practices; and inspection and test frequencies.

RAGAGEP

Widely adopted codes

Consensus standards that have been widely adopted by federal, state, or municipal jurisdictions. For example:

- **National Fire Protection Association (NFPA) codes** as adopted by MA regulations

RAGAGEP

Consensus documents

- **ASME B31.3 *Process Piping Code***
- International Institute of Ammonia Refrigeration's (IIAR) **ANSI/IIAR 2-2008 — *Equipment, Design, and Installation of Closed-Circuit Ammonia Mechanical Refrigerating Systems.***

Such consensus documents are widely used as sources of RAGAGEP by those knowledgeable in the industry.

RAGAGEP

Non-consensus documents

Examples:

- Chlorine Institute's (CI) "pamphlets" focus on chlorine and sodium hypochlorite (bleach) safety
- Methanol Institute's Safe Handling "Technical Bulletins"

Note that OSHA also recognizes applicable manufacturer's recommendations as potential sources of RAGAGEP.

RAGAGEP

Internal standards

Reasons an employer might choose to follow internal standards can include:

1. Translating the requirements of published RAGAGEP into detailed corporate or facility implementation programs and/or procedures.
2. Setting design, maintenance, inspection, and testing requirements for unique equipment for which no other RAGAGEP exists.
3. Supplementing or augmenting RAGAGEP selected by the employer that only partially or inadequately address the employer's equipment.
4. Controlling hazards more effectively than the available codes and consensus and/or non-consensus documents when deemed necessary by the employer's PSM program.
5. Addressing hazards when the codes and consensus and/or non-consensus documents used for existing equipment are outdated and no longer describe good engineering practice.

Internally developed standards must still represent *recognized and generally accepted good engineering practices*.

CAA General Duty Clause

The general duty clause imposes the following primary obligations on the owners and operators of stationary sources:

- Identify hazards which may result from accidental releases using appropriate hazard assessment techniques,
- Design and maintain a safe facility taking such steps as are necessary to prevent releases, and
- Minimize the consequences of accidental releases which do occur.

It applies to any facility where extremely hazardous substances are present.

HAZARD IDENTIFICATION

- The hazards associated with the EHS and the process
- A sufficient hazard assessment should include the type, rate and duration of potential releases.
- Potential release scenarios developed from site specific hazard analysis/review and facility/industry historical data
- The consequences of the release in each case.

RELEASE SCENARIO DEVELOPMENT METHODS

- Experience
 - Past events in plant or industry
- Analytical
 - HAZOP
- Creative
 - “What If” Brainstorming
 - Process Upsets
 - Natural Disasters

Design a Safe Facility

RAGAGEP = Recognized
and Generally Accepted
Good Engineering
Practices

Maintain a Safe Facility

Standard Operating Procedures

SOPs should be written and identify

- safe upper and lower limits for process variables
- corrective measures and
- emergency situations.

Maintain a Safe Facility

- SOPs should include the various phases of operation, including pre-startup checks, startup, normal operations, temporary operations, normal shutdown and emergency shutdown.
- SOPs should clearly warn about conditions/practices likely to cause a release as identified in the PHA and steps that the employee/operator must take to prevent a release if these conditions are encountered.

Management of Change

- When changes in the processes are planned, the owners and operators should evaluate how those changes will affect the hazards identified in the PHAs.
- These changes should be evaluated to determine if hazards, materials of construction, operating and maintenance procedures, and prevention programs need to be updated.

Safety Programs

- Preventive Maintenance Programs:
 - Mechanical integrity of the process equipment
 - Safety mechanisms
 - Schedules for replacement, repairs, or regular maintenance
 - Schedules for inspections and testing
 - maintenance records
- Training Programs:
 - Evaluation of trainee competence
- Self Audits:
 - The owners and operators should practice self auditing of the facility's prevention programs.

GDC Preparedness & Response

- Emergency Planning
 - Anticipation of the types of releases that may occur from the process.
 - Mitigation process.
 - Notification process to local responders.
 - Local responder involvement.
- Incident Investigation Program:
 - Root cause analysis
 - Actions to prevent future similar occurrences

OSHA/EPA -Root Cause Analysis

- Simpler incidents
 - Brainstorming and checklists may be sufficient to identify root causes.
- Complicated incidents
 - Logic/event trees
 - Timelines, sequence diagrams, and causal factor identification

Root Cause - Incident Investigation

Regardless of the combination of tools chosen, employers should use these tools to answer four important questions:

- **What happened;**
- **How did it happen;**
- **Why it happened; and**
- **What needs to be corrected.**

OSHA/EPA Chemical Safety Alert: Safer Technology and Alternatives

- **Substitution**
 - *Process with less hazardous materials*
- **Minimization**
 - *material inventory in process*
 - *quantity of hazardous substances stored*
- **Moderation**
 - *Reduce potential for and magnitude of release*
- **Simplification**
 - *Managing the “human factor”*

Links to Referenced Documents
Available at MCTA Website
www.masscta.org