

2014 Ammonia Safety Day OSHA Update

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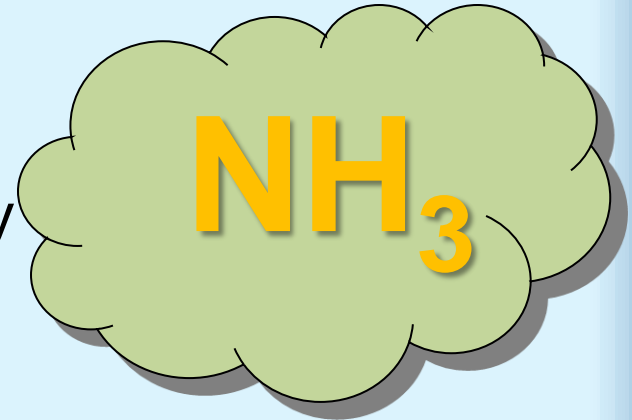
2014 Ammonia Safety Day

OSHA Update

- **29 CFR 1910.119 - Process Safety Management (PSM)**
 - **Applicability**
 - **Determination**
- **Other Applicable Standards**
- **Emphasis Programs**
 - **National Emphasis Programs**
 - **Local Emphasis Programs**
- **Region VII Data**

PSM Applicability

- **Process > 10,000 lbs NH₃**
- **Determination**
 - Maximum Intended Inventory
 - Maximum Process Amount
 - 9,000 - 9,999 lbs.
- **Multiple, Separate Systems <10,000 lbs.**
 - Co-Located
 - **Not Connected, But Effected**
 - Fire / Explosion Potential



NH3 Refrigeration Processes < 10,000 lbs

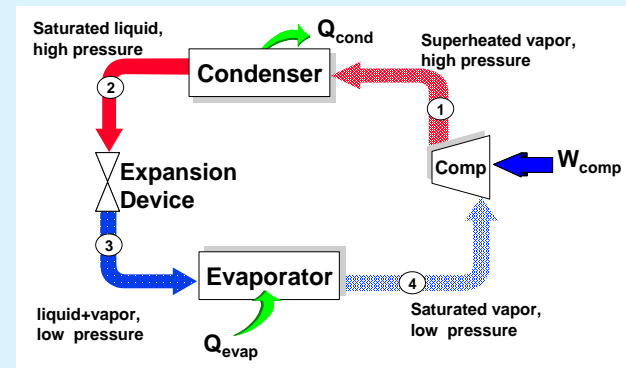
- **Not Covered by 29 CFR 1910.119 - PSM**
- **OSH Act Sec 5(a)(1) - General Duty Clause**
 - **NH3 Release**
 - Toxic Exposure
 - Fire / Explosion
 - **Serious Hazard**
 - **Industry Recognition - IIAR & ASHRAE**
 - **Feasible and Useful Means of Abatement**



Process Safety Management

29 CFR 1910.119

- (a) Application
- (b) Definitions
- (c) Employee Participation
- (d) Process Safety Information



- (e) Process Hazard Analysis
- (f) Operating Procedures

Process Safety Management

29 CFR 1910.119

- (g) Training
- (h) Contractors
- (i) Pre-Start Up Safety Review
- (j) Mechanical Integrity
- (k) Hot Work Permit
- (l) Management of Change



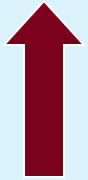
Process Safety Management

29 CFR 1910.119

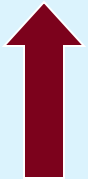
- **(m) Incident Investigations**
- **(n) Emergency Planning and Response**
- **(o) Compliance Audits**
- **(p) Trade Secrets**



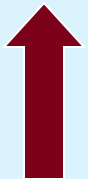
PSM Program Problem Signs



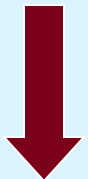
- **System Leaks**



- **NH3 Purchase Quantities**



- **System Downtime**



- **PSM / System Knowledge**

Other Standards

Exposure to Ammonia

- **1910.132 - Personal Protective Equipment**
- **1910.134 - Respiratory Protection**
 - Maintenance
 - Drain Oil Pot
 - Emergency Response
- **1910.1000 - Ammonia Exposure**



Other Standards Hazard Prevention

- **1910.147 - Lockout / Tagout**
- **Subpart S - Electrical Standards**
 - **1910.307 - Hazardous Locations**
 - Class 1, Div 1 or 2



Other Standards

Exposure and Release Mitigation

- **1910.38 - Emergency Action Plans**
 - Facility Employee Evacuation
- **1910.120(q) - HAZWOPER / Emergency Response**
 - Emergency Shutdown
 - Contain Release



Other Standards Construction

- **1926.64 - Process Safety Management**
 - Total Quantity Applicable
- **Other Equivalent Construction Standards**



PLAN . PROVIDE . TRAIN .

Three simple steps to preventing falls.

Chemical NEP

- **PSM Covered Chemical Facilities National Emphasis Program**
- **Implement and Conduct Program**
- **Reduce or Eliminate Workplace Hazards**
 - Catastrophic Release
 - Highly Hazardous Chemicals
- **Not Applicable**
 - Petroleum Refineries
- **Website**
 - http://www.osha.gov/OshDoc/Directive_pdf/CPL_03-00-014.pdf

Chemical NEP

Programmed Inspections - Facilities

- **EPA**
 - Chemical Accident Prevention Provisions, Program 3 Risk Management Plans
- **OSHA**
 - Inspection Database (IMIS and OIS)
 - OSHA Area Office Knowledge of Local Facilities
- **Explosives Manufacturing**
 - North American Industry Classification System (NAICS) Codes

Chemical NEP

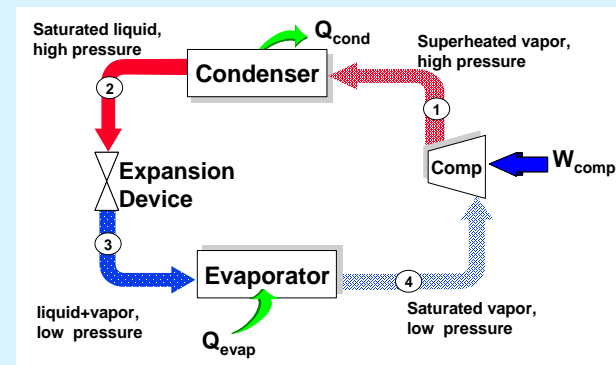
Un-Programmed Inspections

- **PSM-Covered Process**
- **Complaint**
 - Employee
- **Referral**
 - Other Source (EPA, State, Fire)
- **Fatality**
 - 1 or more Employee Deaths
- **Catastrophe**
 - 3 or more Employee Hospitalizations

Chemical NEP

Dynamic List Questions

- **Continuously Develops Dynamic Lists**
- **Categories**
 - General PSM Information
 - Ammonia Refrigeration
 - Chemical Processing
 - Process
 - Equipment
 - Operations



Chemical NEP

Dynamic List Questions

- **Specific Investigative Questions**
 - Gather Facts Related to PSM Requirements
- **Question Subjects**
 - Specific Equipment or Task
 - General Procedure or Process
- **CSHO Select One, or More Units**
- **Not Publically Disclosed**
 - Maintain Inspection Integrity

Chemical NEP - Region VII

PSM Violations

FY 2010-2014 - 40 Inspections

<u>1910.119(f) Operations Procedures</u>	16
<u>1910.119(d) Process Safety Information</u>	15
<u>1910.119(j) Mechanical Integrity</u>	11
<u>1910.119(e) Process Hazard Analysis</u>	10
1910.119(g) Operator Training	5
1910.119(n) Emergency Response Plans	5

(Includes Closed and Open Inspections – Subject to Change)

Chemical NEP - Region VII

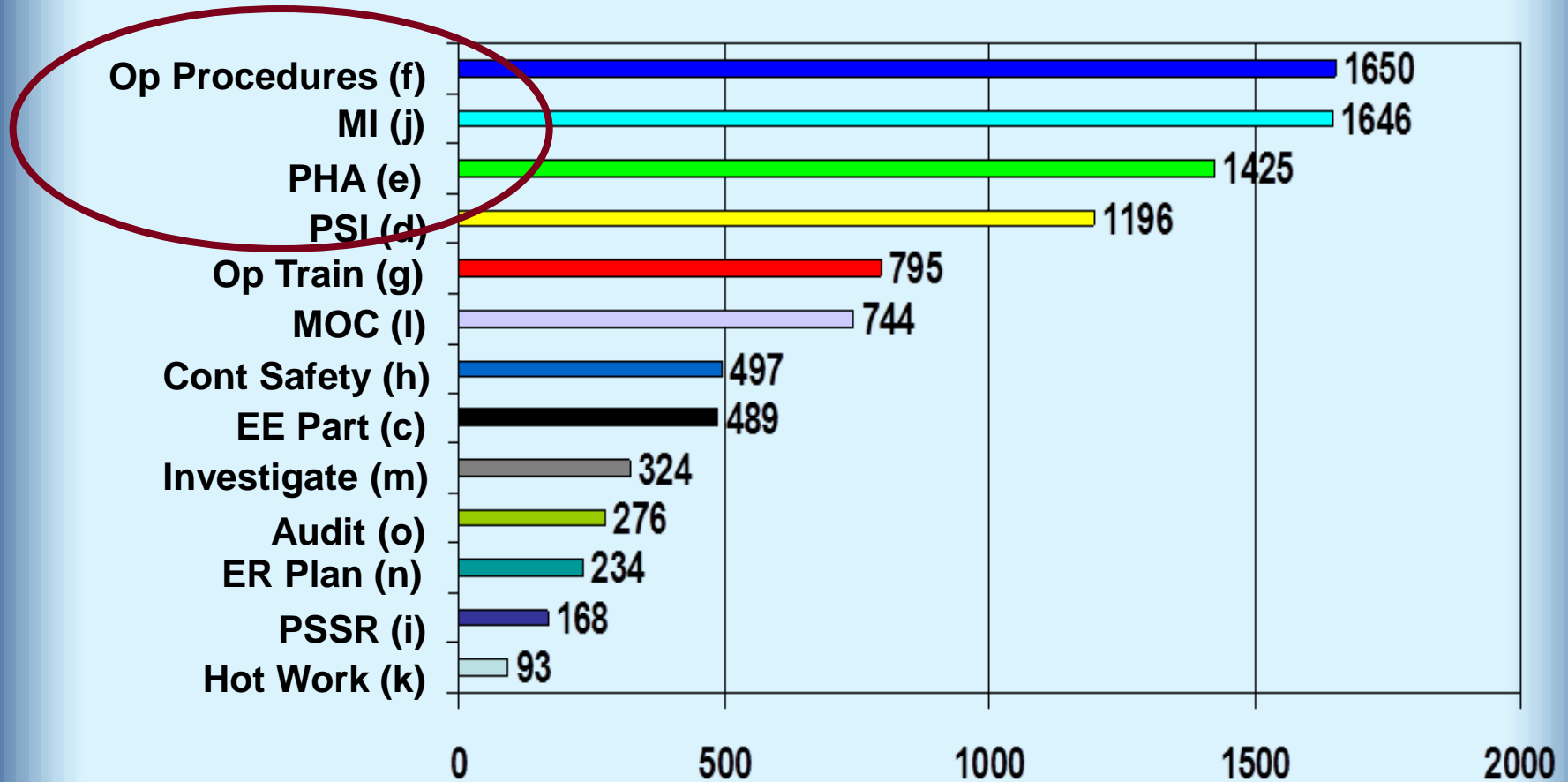
PSM Violations

FY 2010-2014 - 40 Inspections

1910.119(m) Incident Investigations	5
1910.119(h) Contractor Safety	4
1910.119(l) Management of Change	4
1910.119(o) Audit Program	4
1910.119(i) Pre Startup Safety Review	1
1910.119(k) Hot Work	1

(Includes Closed and Open Inspections – Subject to Change)

PSM - 1910.119 Violations SIC 20 and 4222



May 1992 – October 15, 2008

9215 Total PSM Violations

Emphasis Programs

- **Potentially Applicable**
- **National**
 - Site Specific Targeting Program
- **Local (Region / Area)**
 - EPA Chemical Release
 - Missouri Workers Compensation
 - Powered Industrial Trucks
 - Respiratory and Noise Hazards



Hazard Communication

Aligns with the UN's Globally Harmonized System of Classification and Labelling of Chemicals

- **Labeling**
- **Safety Data Sheet**
- **Pictograms**
- **Effective dates**
- **<http://www.osha.gov/dsg/hazcom/index.html>**

Hazard Communication Effective Dates




Effective Completion Date	Requirement(s)	Who
<u>December 1, 2013</u>	<u>Train</u> employees on the new label elements and safety data sheet (SDS) format.	Employers
June 1, 2015 December 1, 2015	Compliance with all modified provisions of this final rule, except: The Distributor shall not ship containers labeled by the chemical manufacturer or importer unless it is a GHS label	Chemical manufacturers, importers, distributors and employers

Hazard Communication Effective Dates

Effective Completion Date	Requirement(s)	Who
June 1, 2016	Update alternative workplace labeling and hazard communication program as necessary, and provide additional employee training for newly identified physical or health hazards. .	Employers
Transition Period to the effective completion dates noted above	May comply with either 29 CFR 1910.1200 (the final standard), or the current standard, or both	Chemical manufacturers, importers, distributors and employers

Hazard Communication

HCS Pictograms and Hazards

<u>Health Hazard</u>	<u>Flame</u>	<u>Exclamation Mark</u>
		
<ul style="list-style-type: none"> • Carcinogen • Mutagenicity • Reproductive Toxicity • Respiratory Sensitizer • <u>Target Organ Toxicity</u> • Aspiration Toxicity 	<ul style="list-style-type: none"> • <u>Flammables</u> • Pyrophorics • Self-Heating • Emits Flammable Gas • Self-Reactives • Organic Peroxides 	<ul style="list-style-type: none"> • <u>Irritant (skin and eye)</u> • Skin Sensitizer • Acute Toxicity • Narcotic Effects • <u>Respiratory Tract Irritant</u> • Hazardous to Ozone Layer (Non-Mandatory)

Hazard Communication

HCS Pictograms and Hazards

Gas Cylinder



- Gases Under Pressure

Corrosion



- Skin Corrosion / Burns
- Eye Damage
- Corrosive to Metals




Exploding Bomb



- Explosives
- Self-reactive
- Organic Peroxides

Hazard Communication

HCS Pictograms and Hazards

Flame Over Circle	<u>Environment</u> <u>(Non-Mandatory)</u>	<u>Skull and</u> <u>Crossbones</u>
 <ul style="list-style-type: none"><li>• Oxidizers	 <ul style="list-style-type: none"><li>• <u>Aquatic Toxicity</u>	 <ul style="list-style-type: none"><li>• <u>Acute Toxicity</u> <u>(Fatal or Toxic)</u>

Hazard Communication Label Information

Product Identifier

Supplier Identification

Precautionary Statements

Hazard Pictograms

Signal Word

Hazard Statement

Supplemental Information

WATER. REST. SHADE.

The work can't get done without them.

OSHA Heat Stress Campaign

Website

<http://www.osha.gov/SLTC/heatillness/index.html>

Smart Phone App





Preventing Falls in Construction

OSHA Falls in Construction Campaign

Website

<http://www.osha.gov/SLTC/stopfalls/index.html>

OSHA Website



- OSHA Website
www.osha.gov
- OSHA's Ammonia Refrigeration eTool
http://www.osha.gov/SLTC/etools/ammonia_refrigeration/index.html
- OSHA's Ammonia Refrigeration eTool - References
http://www.osha.gov/SLTC/etools/ammonia_refrigeration/references/index.html

Questions and Answers