

A Refreshing Approach to Managing Health and Safety

Process Safety Management



Process Safety Management

Mandatory for some...
A great idea for others!



Process Safety Management - Presenters

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Fred Malaby, CIH, CSP

Gabriel Porter, OSHA Region 1



The Process – Three Phases

- Planning
- Operations
- Continuity of Operations



The Process – Planning Phase

- Employee Participation
- Process Safety Information (PSI)
- Process Hazard Analysis (PHA)
- Operating Procedures
- Training
- Contractors



The Process – Planning Phase

- Employee Participation
- Training
- Contractors

ARE SPECIAL!

Continuous throughout all phases



The Process – Operations Phase

- Pre-Startup Safety Review (PSSR)
- Mechanical Integrity (MI)
- Hot Work Permit
- Management of Change (MOC)



The Process – Continuity of Operations Phase

- Incident Investigation
- Emergency Planning and Response
- Compliance Audits



Planning Phase

1910.119(c)

Employee Participation

In order to have a good program you need a good team that is knowledgeable in the process and understands the elements of the standard.



Planning Phase

1910.119(d)

Process Safety Information (PSI)

Information on the process and the equipment are crucial. This is the foundation that the entire program is built on. Without good information to start, the entire process will collapse.

As used in the PSM standard, Recognized and Generally Accepted Good Engineering Practices (RAGAGEP) apply to process equipment design and maintenance; inspection and test practices; and inspection and test frequencies.



Planning Phase

1910.119(e)

Process Hazard Analysis (PHA)

A good PHA is built on good PSI by people who are good at assessing all of the hazards of the process and addressing them. Remember to review your PHA at least every 5 years.



Planning Phase

1910.119(f)

Operating Procedures

Hazards should be engineered out. When they can't operators need clear comprehensive procedures to avoid the hazards identified in the PHA.



Planning Phase

1910.119(g)

Training

Employees need clear training to understand the hazards, avoid the hazards, and potentially respond to the hazards in emergency situations.



Planning Phase

1910.119(h)

Contractors

Contractors working on or near a process need to understand the hazards, avoid the hazards, and know what to do in emergency situations.



1910.119(c)
Employee
Participation

1910.119(d)
Process Safety Information

1910.119(e)
Process Hazard Analysis

1910.119(f)
Operating
Procedures

Planning

1910.119(g)
Training

1910.119(h)
Contractors

Operations Phase

1910.119(i)

Pre-Startup Safety Review (PSSR)

Before you start everything up you want to check one last time for problems. (Measure Twice Cut Once)



Operations Phase

1910.119(j)

Mechanical Integrity (MI)

Even the best system with the best equipment needs routine inspections and maintenance that follow RAGAGEP



Operations Phase

1910.119(k)

Hot Work Permit

Be sure that all employees and contractors doing maintenance work on the system are aware of your hot work procedures before beginning work.



Operations Phase

1910.119(l)

Management of Change (MOC)

The process may not work the way it needs to or your needs change. Before making changes be sure to include safety in your plans.



1910.119(c)
Employee
Participation

1910.119(d)
Process Safety Information

1910.119(e)
Process Hazard Analysis

1910.119(f)
Operating
Procedures

Planning and Operations

1910.119(g)
Training

1910.119(h)
Contractors

1910.119(l)
Management
of Change

1910.119(k)
Hot Work
Permit

1910.119(j)
Mechanical
Integrity

1910.119(i)
Pre-Startup
Safety Review

Continuity of Operations Phase

1910.119(m)

Incident Investigation

Incidents can always happen. Be sure to investigate the small ones to avoid larger problems or catastrophe in the future.



Continuity of Operations Phase

1910.119(n)

Emergency Planning & Response

Incidents can and will happen. Be sure to plan ahead to respond safely. (HAZWOPER and EAP)



Continuity of Operations Phase

1910.119(o)

Compliance Audits

Just because you haven't had any incidents yet doesn't mean there aren't problems. Review your PSM program every 3 years just in case.



1910.119(c)
Employee
Participation

1910.119(d)
Process Safety Information

1910.119(e)
Process Hazard Analysis

1910.119(f)
Operating
Procedures

1910.119(o)
Compliance
Audits

1910.119(g)
Training

Planning, Operations and Continuity of Operations

1910.119(n)
Emergency
Planning &
Response

1910.119(h)
Contractors

1910.119(m)
Incident
Investigation

1910.119(l)
Management
of Change

1910.119(k)
Hot Work
Permit

1910.119(j)
Mechanical
Integrity

1910.119(i)
Pre-Startup
Safety Review

Other Standards and Concepts You Should Be Aware Of

- ANSI/ASSP Z-10.0 2019 Occupational Health and Safety Management Systems
- NFPA 1600® 2019 edition - Standard on Continuity, Emergency, and Crisis Management (now in a custom cycle combined with NFPA 1616 and NFPA 1620) to be consolidated into NFPA 1660 Standard on Community Risk Assessment, Pre-Incident Planning, Mass Evacuation, Sheltering, and Re-entry Programs)
- Six Sigma
- LEAN Manufacturing – risk reduction
- GMP (Good Manufacturing Practices)
- and others

A Refreshing Approach to Managing Health and Safety - Process Safety Management Course Development

- Needs Assessment – Collaboration with OSHA Region I
 - Expand the OTIEC curriculum
 - Engage the community
 - General Industry and Construction Industry working with hazardous chemicals
 - Regulatory compliance – OSHA, EPA, DHS
 - Best Management Practices and Guidelines
 - Business Continuity
 - Emergency Management
 - Crisis Management
 - Recognized and Generally Accepted Good Engineering Practices (RAGAGEP)

Process Safety Management Course Development

- Assemble the Task Group – Expertise in PSM Program Development, Implementation, Emergency Response, Enforcement



- Fred Malaby, CIH, CSP | OSHA Region 1, Retired
- Michael Ziskin, CHCM, CHMM, CBCP, CUSP | Keene State College Adjunct Faculty
- Mark Haskins, CSP | Keene State College Adjunct Faculty
- Gabriel Porter | OSHA Region 1


Process Safety Management Course Development

- Engagement in the first hour
- 1/3 : 2/3 Rule – 1/3 presentation : 2/3 engagement
- Interactive learning – groups/exercises/case studies (historical to present)
- Translate regulatory information in digestible format
- Multi-regulatory approach on Day 1
- Applications oriented
- A process everyone could relate to!

Process Safety Management Course Development

- Multi-regulatory approach on Day 1
- OSHA – PSM/HAZWOPER/HAZCOM
- EPA – RCRA/CERCLA/SARA/CAA-RMP/Cameo
- DHS – Chemical Facility Anti-Terrorism Standards (CFATS)

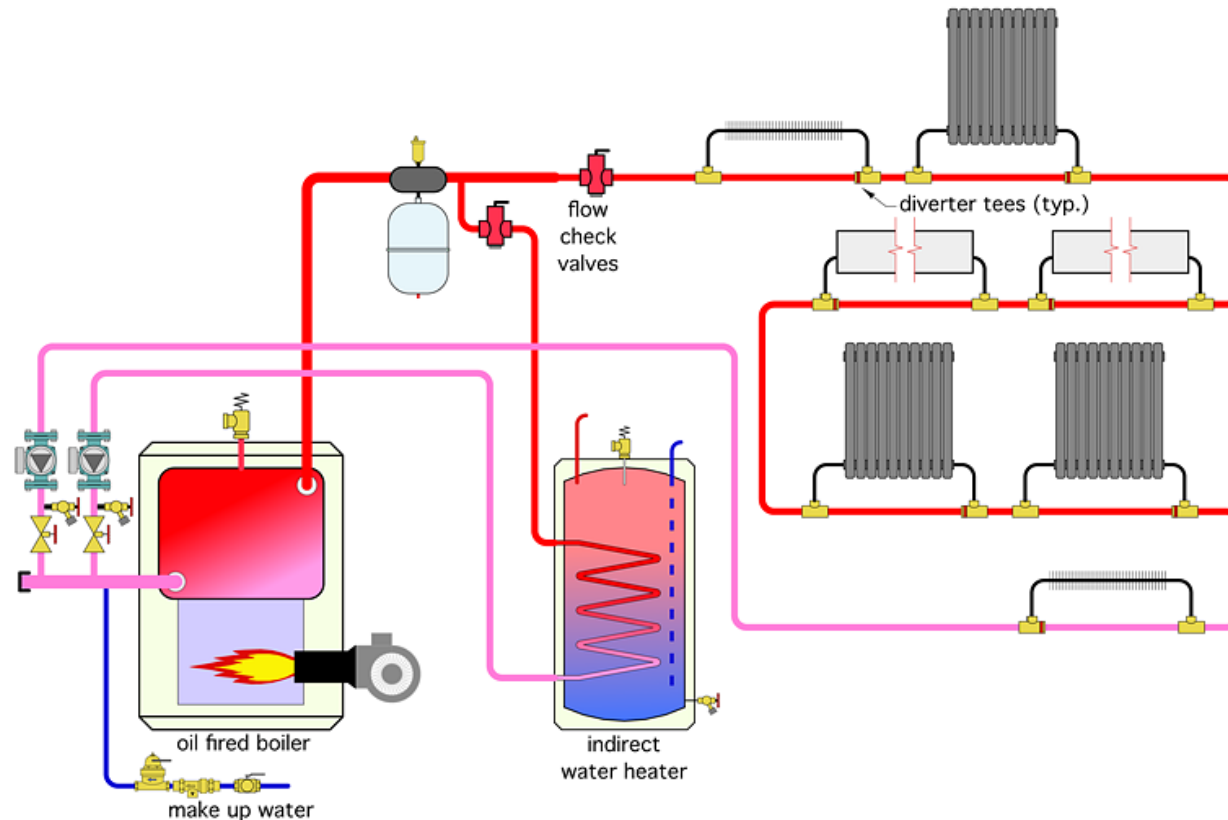
Process Approach

<p>1910.119(c) Employee Participation In order to have a good program you need a good team that is knowledgeable in the process and understands the elements of the standard.</p>	<p>1910.119(d) Process Safety Information (PSI) Information on the process and the equipment are crucial. This is the foundation that the entire program is built on. Without good information to start, the entire process will collapse. (RAGAGEP)</p>	<p>1910.119(e) Process Hazard Analysis (PHA) A good PHA is built on good PSI by people who are good at assessing all of the hazards of the process and addressing them. Remember to review your PHA at least every 5 years.</p>	<p>1910.119(f) Operating Procedures Hazards should be engineered out. When they can't operators need clear comprehensive procedures to avoid the hazards identified in the PHA.</p>	
<p>1910.119(o) Compliance Audits Just because you haven't had any incidents yet doesn't mean there aren't problems. Review your PSM program every 3 years just in case.</p>	<p>Each of the elements of PSM are interrelated</p>  <p>TOTAL COMPLIANCE IS DEPENDENT ON ALL OF THE ELEMENTS WORKING TOGETHER</p> <p>This compliance cycle is continuous and repeated as changes are made</p>		<p>1910.119(g) Training Employees need clear training to understand the hazards, avoid the hazards, and potentially respond to the hazards in emergency situations.</p>	
<p>1910.119(n) Emergency Planning & Response Incidents can and will happen. Be sure to plan ahead to respond safely. (HAZWOPER and EAP)</p>			<p>1910.119(h) Contractors Contractors working on or near a process need to understand the hazards, avoid the hazards, and know what to do in emergency situations.</p>	
<p>1910.119(m) Incident Investigation Incidents can always happen. Be sure to investigate the small ones to avoid larger problems or catastrophe in the future.</p>	<p>1910.119(l) Management of Change (MOC) The process may not work the way it needs to or your needs change. Before making changes be sure to include safety in your plans.</p>	<p>1910.119(k) Hot Work Permit Be sure that all employees and contractors doing maintenance work on the system are aware of your hot work procedures before beginning work.</p>	<p>1910.119(j) Mechanical Integrity (MI) Even the best system with the best equipment needs routine inspections and maintenance that follow RAGAGEP</p>	<p>1910.119(i) Pre-Startup Safety Review (PSSR) Before you start everything up you want to check one last time for problems. (Measure Twice Cut Once)</p>

PSM COMPLIANCE CYCLE

Process Safety Management Course Development

- A process everyone could relate to!




Process Safety Management Course

- 4 Days
- Delivered in both in-seat and virtual formats
- 7 Group exercises
- Numerous case studies – personal experience, CSB investigations

Process Safety Management Course

- 4 Days
- 9 Terminal Objectives

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PSM COMPLIANCE CYCLE

Process Safety Management Course

7 Group exercises

- Process Safety Information
- Process Hazard Analysis
- Mechanical Integrity and Training
- Management of Change and Mechanical Integrity
- Incident Investigation
- Emergency Planning and Response
- Final Case Study and Group Exercise – Putting it all together

Process Safety Management Course Dates

March 1 – 4, 2022 virtual

June 14 – 17, 2022 Mohegan Sun, Uncasville, CT

Keene
STATE COLLEGE



Thank you!