I. Curriculum Criteria: What is Process Safety?

Topics	Course Content/Criteria Target Audience – All Groups	Evaluation Criteria
Definitions and distinguishing between PS and PSM	1. Include definitions and description of the following: a. Importance of process safety (impact) b. Scope of process safety - Enlarge the scope of activities affected by PS c. The difference between compliance and process safety d. The interface between process safety and personal safety 2. Provide explanation of how PSM is a subset of PS, including the following: a. Safe work permitting (example of enlarging scope beyond hot work permit PSM element) b. Example 1 c. Example 2 3. Include exercises for "what does process safety mean to me?" – generate additional examples that demonstrate a comprehension of an expansive PS definition	1. Students shall be able to demonstrate understanding of Process Safety: is a disciplined approach which integrates each employee's roles and responsibilities with effective management of processes and equipment through defined procedures and practices which satisfy regulatory requirements and enable facilities to function safely every day. 2. Students shall be able to demonstrate understanding of Process Safety Process Safety Management (PSM): an OSHA regulation which defines 14 specific compliance elements required to operate chemical and petroleum facilities. The regulation is intended to prevent or minimize the consequences of a catastrophic release of toxic, reactive, flammable, or explosive chemicals. 3. Students shall be able to explain the expansive nature of PS and how the 14 elements of PSM are only a subset of PS (see examples on p. 4).

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Workforce Engagement	1. Discussion of Workforce engagement shall include the following: a. Four (4) real world examples (include at least one local example; include photos/video for at least one example, e.g. from CSB investigations) demonstrating how all of the roles interact/contribute to PS i. Industry example (e.g. CSB video) ii. Design flaw example iii. Maintenance example iv. Operations example b. Description of the importance of process safety in relation to responsibilities	1. Students shall be able to: a. Describe the importance of process safety in relation to responsibilities, including how individual roles interact/contribute to PS

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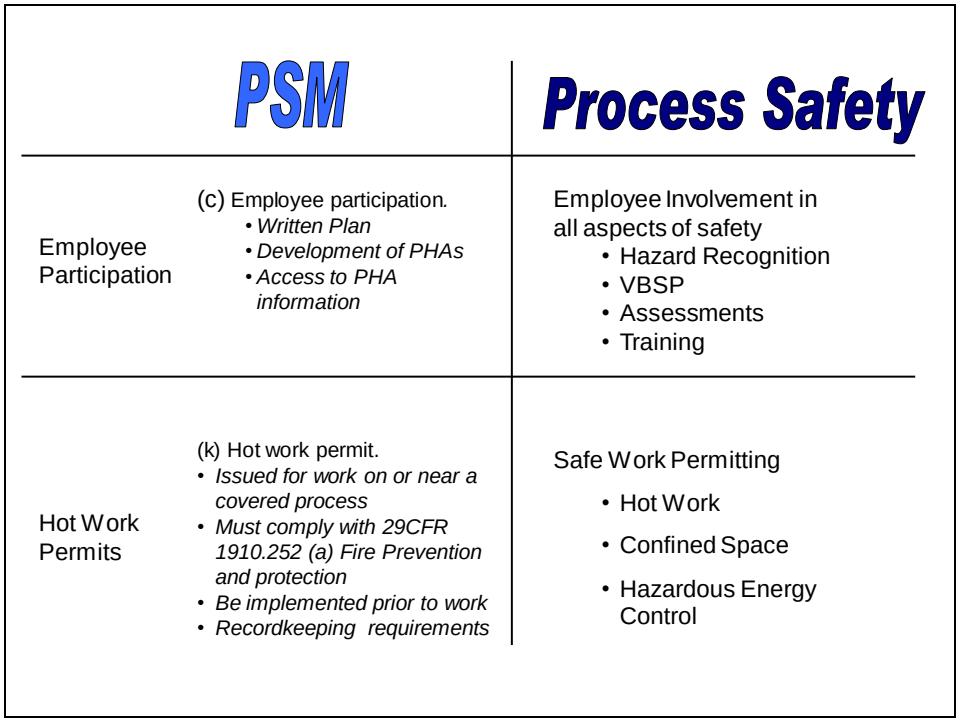
Roles and Responsibilities	1. The following shall be discussed regarding roles and responsibilities a. Individual PS roles (examples for each group); i. Management ii. Supervisors iii. Operations iv. Maintenance v. Professional vi. PHA leaders b. Individuals' interaction with other roles i. Provide a scenario demonstrating interaction 2. Roles and responsibilities may vary between organizations. This section should be tailored to the students' individual organizations 3. Through group interaction, discuss each students' personal roles and responsibilities in PS	1. Through group interaction, students shall be able to identify roles and responsibilities for each group 2. Students shall be able to describe their own personal roles in PS, and how their individual role and responsibility interacts/contributes to PS safety (**method of evaluation of this aspect shall be "fill in the blank" format only**)

Topics	Course Content/Criteria Target Audience – All Groups	Evaluation Criteria
Managing the interfaces essential to process safety	1. Provide examples from the Workforce Engagement section (or use CSB example): a. To demonstrate that there are interfaces crucial to process safety b. To discuss interface/integration deficiencies 2. Include small group discussion on local/company identified incident(s)	1. Students shall be able to do the following: a. identify the interface/integration deficiencies b. identify ways to correct the interface/integration deficiencies c. identify interface/integration deficiencies from their own facility (*potential conversation for a specific location*)

Examples of the relationship between Process Safety and Process Safety Management



II. Definitions

1. Definitions shall include the following:

Process Safety is a disciplined approach which integrates each employee's roles and responsibilities with effective management of processes and equipment through defined procedures and practices which satisfy regulatory requirements and enable facilities to function safely every day.

Process Safety Management (PSM) is an OSHA regulation which defines 14 specific compliance elements required to operate chemical and petroleum facilities. The regulation is intended to prevent or minimize the consequences of a catastrophic release of toxic, reactive, flammable, or explosive chemicals.

III. Student Evaluations

1. Method of student evaluations:

- Cannot include True/False questions
- Must use one of the following formats: single answer; multiple answer; "fill in the blank" and/or matching;
- Shall include 12-18 questions weighted equally from the four sections
- Attendees must score 100% (with remediation allowed)

IV. Course Structure

2. Course(s) shall:

- The course will be led by an instructor
- Minimum 3.5 hours of instruction
- Maximum attendee to instructor/facilitator ratio – 20-25

V. Frequently Asked Questions (Informative)

1. Why do you consider safe work permits part of PS when OSHA PSM only addresses hot work permits?

Recommended Answer: OSHA does address other permits such as those required for Confined Space Entry and Hazardous Energy control in other OSHA regulations. Process Safety also includes Area Clearance permit which control movement of equipment and material within a process. Every permitted activity contributes to success in process safety.

2. Why are we doing PS training even though I recently took a PSM training course?

Recommended Answer: PSM Compliance is an important step in achieving process safety. You are here today to gain a more complete understanding of your role in process safety and to understand that it is the integration of all process safety related activities that leads to process safety achievement.

3. Is this PS training being delivered throughout our industry?

Recommended Answer: The refining and petrochemical industries have a long track record of excellence in employee safety performance yet still have experienced catastrophic events. OSHA PSM established the building blocks of process safety and while there has been improvement there still have been catastrophic events. This effort supported by NPRA and API is focused on helping everyone in our industry to take the next step in achieving Process Safety Excellence.

4. Why isn't the safety department teaching this PS topic?

Recommended Answer: They may in the future, but for now we have identified a number professional training providers who have the capability of developing and delivering this course in a consistent way throughout industry, While there may be some customization to your particular company and site, the message, philosophy and learning objectives are the same. Each training provider has undergone a rigorous certification process before being allowed to conduct the course.