

## 26 PROCESS SAFETY MANAGEMENT

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### QUIZ 1 (20 POINTS)

#### *True/False (5 points)*

1. SARA Title III required companies to develop emergency preparedness plans; recognition, knowledge, and inventories of hazardous chemicals; and to report toxic releases.
  - a. true
  - b. false
2. One of the factors in process safety management accountability is management and supervisory accessibility and communications.
  - a. true
  - b. false
3. If original equipment design information is not available, the information need to establish a process safety management program may be reconstructed from inspection records.
  - a. true
  - b. false
4. Management-of-Change programs do not need to consider temporary changes and variances in a process.
  - a. true
  - b. false
5. Employers need verification that contractor employees have been trained even though they are only temporary employees.
  - a. true
  - b. false

#### *Multiple Choice (6 points)*

6. Which of the following organizations was created by an amendment to the U.S. Clean Air Act?
  - a. the Center for Chemical Process Safety
  - b. the Chemical Safety and Hazard Investigation Board
  - c. the Organizations Resource Counselors
  - d. the Synthetic Organic Chemical Manufacturers Association
7. Which of the following are not exempt from OSHA's PSM standard?
  - a. a company that stores 12,000 pounds of flammable liquid
  - b. hydrocarbons used only for fuel in the workplace
  - c. retail facilities
  - d. oil well drilling operations





20. Process facilities are subject to two different types of standards and regulations. What are they and how are they different?

## QUIZ 2 (20 POINTS TOTAL)

### *True/False (5 points)*

1. According to OSHA, process safety management is the proactive identification, evaluation, mitigation, or prevention of chemical releases that could occur as a result of an equipment failure.
  - a. true
  - b. false
2. Risk management plans required by the Clean Air Act need not be registered with the EPA, although they must be registered with state and local agencies.
  - a. true
  - b. false
3. The long-term goals of process risk management should be based on the degree of risk that management is willing to accept.
  - a. true
  - b. false
4. An event tree analysis works backward from a defined incident to identify the combination of errors or failures involved in an incident.
  - a. true
  - b. false
5. When implementing a training program for employees who work with hazardous chemicals, management needs to consider the design of process maintenance procedures.
  - a. true
  - b. false

### *Multiple Choice (6 points)*

6. When did the CMA initiate its Responsible Care Program?
  - a. 1983
  - b. 1985
  - c. 1988
  - d. 1990

7. Which of the following focused on preventing releases of hazardous chemicals that could expose employees and others to danger?
  - a. 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals
  - b. Petrochemical (PETROSEP) Industries Compliance Directive
  - c. Instruction CPL 2-2.45, Systems Safety Evaluation of Operations with Catastrophic Potential
  - d. 40 CFR 68 Section 112 (r), Risk Management Programs for Chemical Accidental Release Prevention
  
8. Which of the follow methods of hazard analysis uses specific guide words, which are systematically applied to parameters to identify the consequences of changes in the design of a process?
  - a. Fault Tree Analysis
  - b. Failure Mode and Effect Analysis
  - c. “What If...?”/Checklist
  - d. HAZOP Study
  
9. A good process safety management practice is to review process hazard analyses at least every \_\_\_\_\_, even if the processes, equipment, or materials have not changed.
  - a. two years
  - b. three years
  - c. five years
  - d. seven years
  
10. Mechanical integrity requirements apply to \_\_\_\_\_.
  - a. vent devices
  - b. pumps and piping systems
  - c. materials of construction
  - d. all of the above
  
11. To comply with OSHA regulations, how many compliance audit reports does an employer need to keep on file?
  - a. the most recent report
  - b. the last two reports
  - c. the last three reports
  - d. none (OSHA does not require employers to keep reports.)

**Short Answer (7 points)**

12. What is the mission of the Center for Chemical Process Safety?



