Chapter 29

PROCESS SAFETY MANAGEMENT

Policy Statement: It is the policy of the Division of Occupational Safety and Health (DOSH), also known as Cal/OSHA or the Division, to enforce the requirements of Title 8 California Code of Regulations: Subchapter 7 General Industry Safety Orders Section 5189 (Process Safety Management), Subchapter 14 Petroleum Safety Orders Drilling and Production, and Subchapter 15 Petroleum Safety Orders Refining Transportation and Handling to prevent unwanted releases of highly hazardous materials into locations which could expose employees and others to serious safety and health hazards. Under Region VI, the Process Safety Management jurisdiction is divided into two units: PSM North District and PSM South District. The area covered by each office is divided at the northern boundaries of San Luis Obispo, Kern and San Bernardino counties. This division does not preclude the district offices from assisting with, or being assigned, tasks outside of their normal jurisdiction.

Authority: DOSH will administer this policy in compliance with all applicable laws, rules, and guidance:

- California Labor Code, Sections 7850 through 7870 and 142.3. Title 8 California Code of Regulations: Subchapter 7 General Industry Safety Orders Section 5189 (Process Safety Management of Acutely Hazardous Materials), Subchapter 14 Petroleum Safety Orders Drilling and Production, and Subchapter 15 Petroleum Safety Orders Refining Transportation and Handling.

PROCEDURES:

A. PSM COVERAGE IN GENERAL

1. Scope

The Process Safety Management of Acutely Hazardous Materials Standard (PSM) has broad applicability to potentially hazardous processes that exist in a wide variety of industries, although its primary focus is on the chemical and allied products industry and on the petroleum refining and related industries.

2. Determining Coverage

a. To ensure that establishments covered by PSM are complying with PSM requirements, compliance personnel shall determine if the inspected establishment contains a process covered by PSM when conducting a programmed, accident, complaint or referral inspection.

> NOTE: A process is any activity conducted by an employer that involves an acutely hazardous material, flammable substance or explosive including any use, storage, manufacturing, handling, or on-site movement of any of the preceding substances or combination of these activities. For purposes of this definition any group of vessels which are interconnected, and separate vessels which are located such that an acutely hazardous material could be involved in a potential release, shall be considered a single process.

b. Aside from determining PSM coverage, PSM compliance requirements in chemical or petroleum refining industries shall usually be assessed by Division personnel who have successfully completed the Division sponsored or approved PSM Training and are members of either the North or South PSM District Office.

c. The primary enforcement method the Division will utilize to assess PSM compliance in covered establishments is a PSM-specific inspection, termed a Program-Quality-Verification, or PQV inspection. The PQV inspections will be performed by the PSM District Offices as a programmed inspection or in response to a referral from a District Office or from another source.

3. Programmed Inspections

a. Programmed inspections in establishments on the list of the Federal Environmental Protection Agency Risk Management Plans or California EPA List of Risk Management Plans shall only be performed by members of one of the Division's PSM District Offices.

b. However, when conducting a programmed inspection in an

establishment not on the List of Risk Management Plans but which may contain a process which could be covered by PSM, compliance personnel shall usually determine when assessing the establishment employer's Hazard Communication Program if:

1. The inspected establishment's process involves a chemical at or above the specified threshold quantities (TQ) listed in Appendix A of Section 5189 and a flammable liquid or gas as defined in Sec.5189(c).

   EXCEPTION: (a) Flammable liquids stored in atmospheric tanks or transferred which are kept below their normal boiling point without benefit of chilling or refrigeration; (b) hydrocarbon fuels used solely for workplace consumption (e.g., comfort heating propane, gasoline for motor vehicle refueling) if such fuels are not part of a process containing another acutely hazardous chemical covered by Section 5189; or (c) Retail facilities, oil or gas well drilling or servicing operations or normally unoccupied remote facilities.

2. The inspected establishment process involves explosives manufacturing operations.

c. If compliance personnel determine that an inspected establishment's process is covered by PSM, compliance personnel shall document PSM coverage by making a note in Item 21 of the Cal/OSHA Form 1A.

d. The District Manager will refer this information to the appropriate PSM District Office.

4. Complaint and Referral Inspections

If a District Office receives a complaint or referral item involving a hazard covered under Title 8 California Code of Regulations: Subchapter 7 General Industry Safety Orders Section 5189 (Process Safety Management of Acutely Hazardous Materials), Subchapter 14 Petroleum Safety Orders Drilling and Production, and Subchapter 15 Petroleum Safety Orders Refining Transportation and Handling, the District Manager shall contact the appropriate PSM District Office to determine whether the item should be transferred to the PSM District office.

5. Accident Investigations

If a District Office receives an accident report and compliance personnel

discover that the establishment is covered by Title 8 California Code of Regulations: Subchapter 7 General Industry Safety Orders Section 5189 (Process Safety Management of Acutely Hazardous Materials), Subchapter 14 Petroleum Safety Orders Drilling and Production, or Subchapter 15 Petroleum Safety Orders Refining Transportation and Handling, the District Manager shall immediately notify the District Manager of the appropriate PSM District Office. A determination will then be made as to whether the District Manager will transfer the accident to PSM or conduct the accident investigation from the District Office. All accidents involving refinery operations and oil production facilities will be conducted by the PSM District Offices.

B. PROGRAM-QUALITY-VERIFICATION (PQV) INSPECTIONS

1. Definition

A PQV inspection is an inspection in an establishment covered by PSM, performed by compliance personnel who have successfully completed the Division's sponsored or approved PSM Training, and involves a comprehensive evaluation of the procedures used by the establishment employer, and any process-related contractor employers, to manage the hazards associated with processes using highly hazardous chemicals.

2. Approach to Program, Quality and Verification

a. The establishment employer's and the contractor employer's Program for complying with each PSM element shall be evaluated by safety engineers and industrial hygienists who have successfully completed appropriate PSM training.

b. The Quality of the establishment employer's and the contractor employer's procedures shall be compared to acceptable industry practices to determine compliance.

c. Verification of the effectiveness of the establishment employer's and the contractor employer's program implementation shall be determined by a thorough review of all PSM written programs and records of activity, interviews with employees at different levels, and observation of site conditions.

3. PQV Inspection Scheduling

a. Region VI shall establish the PQV Targeted Inspection List for each fiscal year. This list will be developed by each PSM District Manager for their area of jurisdiction. Targeted establishments will be primarily those facilities on the

Federal/EPA or Cal/EPA List of Risk Management Plans; however any public information source may be used to select a potential inspection candidate.

b. Establishment Selection

1. By July 31 of each year, the PSM District Managers will forward to Region VI their lists of potential PQV inspection candidates.

2. In developing their lists, the District Manager shall base his or her selection on the following factors, and shall document which factors were used to make the selection:

    a. The number of employees at the establishment;

    b. The age of the establishment;

    c. The toxicity of chemicals used in the establishment's processes;

    d. The frequency and severity of electronic and print media reports of spills, releases or other adverse incidents at the establishment;

    e. Past compliance history of the establishment, including complaints received and inspected, accidents investigated, programmed inspections conducted and/or follow-up inspections due; and

    f. Information from the United States or California Environmental Protection Agencies, local air and water quality districts, and fire departments.

3. These lists will be jointly reviewed by Region VI (RM and/or Sr. Safety) and the PSM District Managers to prioritize the inspection schedule and generate the PQV Targeted Inspection List for that year.

c. Deleting Establishments

The Region VI Regional Manager or Sr. Safety Engineer may remove an establishment from the PQV Targeted Inspection List if any of the following is confirmed:

1. The establishment has received a comprehensive

programmed inspection, or PQV inspection, within the previous three years;

2. The establishment is included in a corporate settlement agreement entered into by the Division requiring appropriate management systems for process safety;

3. The establishment is a Cal/VPP site;

4. The establishment is a corporate office or headquarters facility and is not engaged in any activity which poses a process safety hazard;

5. The establishment is not covered by PSM because of threshold quantity (TQ) considerations (see Sec. 5189 Appendix A) or because the establishment is one which falls into an EXCEPTION found in Sec. 5189(b)(1);

6. The establishment has been the subject of a comprehensive programmed, accident, complaint or referral inspection in the preceding year during which the establishment's PSM programs were evaluated.

4. PQV Compliance Personnel Resources

a. PQV Inspections

1. Only safety engineers and industrial hygienists who have successfully completed appropriate PSM training shall conduct PQV inspections.

NOTE: Appropriate PSM training includes either successful completion of the OSHA Training Institute's Course 330 (Safety and Health in the Chemical Processing Industries) and Course 340 (Hazard Analysis in the Chemical Processing Industries), or successful completion of the Division's sponsored or approved PSM Training.

Refresher training will be provided on an annual basis. Training topics may include, but not limited to, Ammonia Refrigeration, Explosive Process, Process Hazard Analysis Revalidation, and Pipeline Inspection Programs. Training will be provided by DM's and Regional Seniors.

2. Due to the size and complexity of many establishments

covered by PSM, a PSM team consisting of an industrial hygienist and a safety engineer will conduct PQV inspections whenever needed. One will be designated as a Team Leader for this inspection. Each team member will conduct a separate inspection unless otherwise directed by their District Manager.

5. Personal Protective Equipment

   a. All compliance personnel conducting PQV inspections shall wear appropriate protective equipment.

   b. In addition, compliance personnel shall:

      1. Wear flame retardant coveralls for protection from flash fires in all areas of the plant where a fire potential exists and when required by the establishment's policy and procedures.

         NOTE: Clothing made of hazardous synthetic fabrics shall not be worn underneath flame-retardant coveralls.

      2. When required by employers SOP or by situation, carry emergency escape respirators during the walkaround portion(s) of the inspection when inspecting process areas subject to explosion and fire.
         All compliance personnel shall be in compliance with the Division's Respiratory Protection Program located in the Division's Administrative Policy and Procedures Manual Section A-22.

         NOTE: The PSM District Manager shall ensure that all compliance personnel conducting PQV inspections receive proper training in the use of respiratory protection equipment.

      3. Ensure that employer required hot work permits have been obtained for any photographic equipment, including still and video cameras, used in the process areas of the establishment being inspected.

6. PQV Inspection Procedures
   Compliance personnel conducting PQV inspections shall follow the inspection procedures set forth in Chapter 7 and the procedures specified in this section.

a. Opening Conference

1. Management Representation
   The PQV Team Leader shall request that the safety manager of the facility, the process safety manager, or other persons capable of explaining the establishment's process safety management program attend the Opening Conference.

   NOTE: The PQV Team Leader shall also request that any contractor employers be present during the Opening Conference when their presence is necessary.

2. Process Overview
   The PQV Team Leader shall request that the employer provide a detailed overview of the chemical process at the facility, including block diagrams indicating the specific chemicals and processes involved.

3. Process Safety Management Program
   Prior to conducting the Walkaround, the PQV Team Leader shall request an explanation of the company's process safety management program including, but not limited to, how the elements of PSM are implemented, the personnel who have been designated as responsible for implementation of the elements of PSM and a description of any records which can be used to verify compliance with the PSM standard.

4. Emergency Response Procedures
   Prior to conducting the Walkaround, PQV Team Members shall familiarize themselves with the establishment's emergency response procedures and emergency alarms.

b. Information and Documentation Requests

1. General and Process-Related

   At the conclusion of the Opening Conference, compliance personnel shall request access to the following documents (utilizing the Document Request Sheet (Cal/OSHA 1AY) and inform the employer that a request may be made at a later date for copies of these documents:

   a. Log 300

Log 300 for the past three (3) years for both the establishment's employer and all process-related contractor employer(s).

b. Employee Participation

Employer's written plan of action regarding the implementation of employee participation.

c. Process Safety Information

Written process safety information for the unit(s) selected, such as flow diagrams, piping and instrumentation diagrams (P&ID's), and process narrative descriptions.

NOTE: The employer is required to compile process safety information on a schedule consistent with the employer's schedule for conducting process hazard analyses.

d. Process Hazard Analysis

Documented priority order and rationale for conducting process hazard analyses; copies of any process hazard analyses performed after May 1987; lists of team members; summary of actions to promptly address findings; written schedules for actions to be completed; documentation of resolution of findings; documentation verifying communication to appropriate personnel; and a five (5) year revalidation of original process hazard analysis required by the PSM standard.

e. Operating Procedures

Written operating procedures for safely conducting activities in each selected unit; annual certification that operating procedures are current and accurate; written procedures describing safe work practices for potentially hazardous operations, including (but not limited to) lockout/tagout, confined space entry, lifting equipment over process lines, capping open-ended valves, opening process equipment or piping, excavation, and control over entrance into a facility for maintenance, laboratory, or other support

personnel.

f. Training Records

'Training records for initial and refresher training for all employees in the selected unit(s) whose duties involve operating a process; methods for determining the content of the training; methods for determining frequency of refresher training; certification of required knowledge, skills, and abilities to safely perform their job for employees already involved in operating a process on May 26, 1992, who have not received initial training and other training materials.

g. Pre-Start Up Safety Records

Pre-Start Up safety review for new facilities and for modified facilities when the modification is significant enough to require a change in the process safety information; documentation of employee training for any changes.

h. Integrity of Process Equipment

Written procedures and schedules to maintain the ongoing integrity of process equipment; the relevant portions of applicable manufacturers' instructions, codes, standards, and inspection and tests performed on process equipment in the unit(s) selected.

i. Permits

Hot work permit program and active permits issued for the unit(s) selected.

j. Management of Change

Written procedures to manage change(s) to process chemicals, technology, equipment and procedures; and changes to facilities that affect a covered process.

k. Incident Investigation

Incident investigation reports for the unit(s) selected, resolutions and corrective actions taken in

response to those incidents.

l. Emergency Action Plan

Written emergency action plan including procedures for handling small releases and evidence of compliance with 8 CCR 5192 (a), (p), and (q), where applicable.

2. Contractor-Related

At the conclusion of the Opening Conference, compliance personnel shall request information and access to the following documents and inform the establishment employer and any contractor employers present that a request may be made at a later date for copies of this information and/or documents:

a. From the Establishment's Employer

1. Documents relating to contractor employers' safety performance and programs.

2. Information about methods of informing contractor employers of known potential hazards related to contractor's work and the process and applicable provisions of the emergency action plan.

3. Information about safe work practices to control the entrance, presence and exit of contractor employers and contract employees in covered process areas.

4. Information about the evaluation of contractor employer performance in fulfilling responsibilities required by PSM.

5. A list of unique hazards presented by the contractor's work or hazards found in the workplace that has been reported to the employer by the contractor.

b. From Contractor Employers

1. Records showing that contract employees

have received effective training in safe work practices which are related to the process on, or near, where they are working.

2. Information about known potential fire, explosion or toxic release hazards related to the particular contract activity and any applicable provisions of the establishment's emergency action plan.

3. A list of unique hazards presented by the contractor employer's work or hazards found in the establishment which has been reported to the contractor employer by their employees.

c. Walk-around

1. Purpose

a. After the Opening Conference, a brief Walkaround of those portions of the establishment within the scope of PSM shall be conducted.

NOTE: A more extensive Walkaround may be necessary after selection of the process unit(s) for inspection.

b. The purpose of the initial Walkaround is:

1. To give compliance personnel an overview of the facility's operations;

2. To allow compliance personnel to observe potential hazards, such as pipe-work in risk of impact or corroded or leaking equipment; unit or control room location; location of relief devices; and

3. To solicit input from employees or employee representatives concerning potential PSM program deficiencies.

2. Selection of Processes

The PQV Team Leader shall select one or more of the establishment's processes to evaluate for PSM compliance.

Process selection shall be based on the following factors, which shall be documented in the case file:

a. Hazards observed during the initial walkthrough;

b. Incident reports and other history;

c. Company priorities for or completed process hazard analyses;

d. Age of the process unit;

e. Nature and quantity of chemicals involved;

f. Input from employees or employee representatives;

g. Current hot work, equipment replacement, or other maintenance activities; and

h. Number of employees present.

C. SUBCHAPTER 14 PETROLEUM SAFETY ORDERS DRILLING AND PRODUCTION, AND SUBCHAPTER 15 PETROLEUM SAFETY ORDERS - REFINING TRANSPORTATION AND HANDLING

1. Complaint, Accident, and Referral inspections will be conducted as outlined in Chapter 7.
2. Facilities regulated by Subchapter 14 Petroleum Safety Orders - Drilling and Production, and Subchapter 15 Petroleum Safety Orders - Refining Transportation and Handling are not subject to Programmed Quality Verification (PQV) inspections.

CI. PRESSURE VESSEL UNIT AND RISK BASED INSPECTION REVIEW

1. The Pressure Vessel Unit of the Division receives requests from facilities regulated by Title 8, Section 5189 (Process Safety Management) to re-rate pressure vessels and/or grant extensions on boilers. When requested by the Pressure Vessel Unit, the respective PSM District Office will review the Management of Change (MOC) provided by the Employer concerning the re-rate of pressure vessels or boiler extensions. The following procedures within the Management of Change should be reviewed:

    a. Operating Procedures

b. Process Safety Information

c. Mechanical Integrity Program i.e. changes in inspection and testing procedures.

2. When variances are submitted by Petroleum Refineries to the Division, via the

Pressure Vessel Unit, The Pressure Vessel Unit will forward the variance to the respective PSM District Office for review and comment.

3. When a petroleum refinery submits to the Division a risk-based inspection program or a fitness-for-service program as required by Title 8, Section 6857, the respective PSM District office and Pressure Vessel Unit will review and approve concurrently, prior to implementation of the program by the facility.

E. PSM CITATIONS

1. Citation Documentation

All citations and proposed penalties for PSM violations shall be documented in accordance with the procedures set forth in the appendix of Chapter 18.

a. Violation Elements

PSM Team Members and other compliance personnel shall utilize the PSM Audit Guidelines to determine the elements of a PSM violation.

b. Violation Classification

PSM requirements are closely interrelated and emphasize the application of management controls when addressing the risks associated with handling or working near hazardous chemicals; any PSM violation may be a condition which could result in death or serious physical harm to employees. Thus, most PSM violations can be classified as serious when the element of employer knowledge can be satisfied.

2. Citation Review

All PSM citations shall be reviewed prior to issuance by the PSM District Manager for all PQV inspections, or by the District and Regional Managers for non-PQV inspections involving PSM

citations.

3. Citation Issuance

All PSM citations shall be office-issued from a PSM District Office, or by the District Office conducting a non-PQV inspection and issued in accordance with the procedures set forth in Chapter 18.

F. CONSTRUCTION ACTIVITY PERMITS AT PSM ESTABLISHMENTS

Construction activity permits for PSM establishments, where there is an exclusive jurisdiction by the PSM District Office (primarily oil refineries and production facilities), will be issued by the PSM District Office that has jurisdiction over the site. The PSM District Office may elect to have the compliance District Office issue the permit, but in all cases the PSM District Office will participate in the permit conferences to review any PSM issues.