

OREGON OCCUPATIONAL SAFETY AND HEALTH DIVISION
DEPARTMENT OF CONSUMER AND BUSINESS SERVICES

PROGRAM DIRECTIVE

Program Directive A-177
Issued April 5, 1993
Revised March 7, 2008

SUBJECT: Process Safety Management of Highly Hazardous Chemicals

**AFFECTED CODES/
DIRECTIVES:**

PURPOSE: This instruction establishes uniform policies, procedures, standard clarifications, and compliance guidance for enforcement of the standard for Process Safety Management of Highly Hazardous Chemicals, 1910.119 ("PSM standard"), and amendments to the standard for Explosives and Blasting Agents, 1910.109.

SCOPE: This instruction applies OR-OSHA-wide.

REFERENCES:

- A. 29 CFR 1910.119, Process Safety Management of Highly Hazardous Chemicals; Final Rule; February 24, 1992, Federal Register Vol. 57, No. 36, pp. 6356-6417.
- B. OSHA Instruction CPL 2.45B, June 15, 1989, the Field Operations Manual (FOM).
- C. OSHA Instruction STP 2.22A, CH-2, January 29, 1990, State Plan Policies and Procedures Manual.
- D. OSHA Instruction CPL 2.94, July 22, 1991, OSHA Response to Significant Events of Potentially Catastrophic Consequence.
- E. OSHA Instruction ADM 1-1.12B, December 29, 1989, Integrated Management Information System (IMIS) Forms Manual.
- F. Oregon Office of State Marshal Hazardous Substance Information System (HSIS) 2006

CANCELLATION: This instruction cancels Program Directive D-32.

ACTION: All compliance and enforcement activities related to the PSM standard conducted by OR-OSHA shall adhere to the guidelines of this instruction.

BACKGROUND: On February 24, 1992, OSHA promulgated the Final Rule for Process Safety Management of Highly Hazardous Chemicals. This standard originally became effective on May 26, 1992. An administrative stay delayed the effective date of paragraphs (f), (h), (j), and (l) until August 26, 1992 when the stay expired and the stayed provisions became fully effective. OR-OSHA adopted the rules by reference on August 13, 1992, with an effective date of November 24, 1992.

- A. In recent years, a number of catastrophic accidents in the chemical industry have drawn attention to the safety of processes involving highly hazardous chemicals. OSHA determined that employees have been and continue to be exposed in their workplaces to the hazards of releases of highly hazardous chemicals which may be toxic, reactive, flammable, or explosive.
- B. The requirements of the PSM standard are intended to eliminate or mitigate the consequences of such releases. The standard emphasizes the application of management controls when addressing the risks associated with handling or working near hazardous chemicals.
- C. In addition, the PSM standard has been developed in fulfillment of OSHA's obligation under the Clean Air Act Amendments (CAAA) of 1990, section 304(a). The final rule is consistent with the mandate of the CAAA.
- D. It is anticipated that joint inspection activities related to the PSM standard will arise between OR-OSHA, OSHA, the Environmental Protection Agency, and the Chemical Safety and Hazard Investigation Board, which was mandated by the CAAA.

**ENFORCEMENT
ACTIVITY
RELATED TO
THE PSM
STANDARD
TYPES OF
INSPECTIONS:**

1910.119 has broad applicability to potentially hazardous processes that may exist in a wide variety of industries. Accordingly, enforcement activities related to the PSM standard -- either to determine if an employer is covered by the standard or to assess the employer's compliance with it -- may take place in any of the inspection types described below. The following guidelines shall apply to PSM-related compliance activity:

- A. Program-Quality-Verification (PQV) Inspections. The primary enforcement model for the PSM standard shall be the PQV inspection.
- B. Unprogrammed PSM-Related Inspections. In all unprogrammed inspection activity relating to the PSM standard, a determination shall be made as to whether the establishment is covered by 1910.119.

1. If a formal complaint or referral relating to the PSM standard is received at a company with a PSM covered process the complaint or referral item(s) shall be investigated and:
 - a. All programs required by the PSM standard shall be screened for obvious violations; and
 - b. A referral for a PQV inspection shall be considered if major deficiencies are indicated. This determination shall be documented in the case file.

- C. Responses to Accidents and Catastrophes. Responses to accidents and catastrophes involving PSM shall follow the guidelines contained in Chapter 2 of the FIRM and -- where appropriate -- in Program Directive A-165, "OR-OSHA Response to Significant Events of Potentially Catastrophic Consequence," in addition to the guidelines of this instruction. If the employer has a PSM covered process, a referral for a PQV inspection shall be considered if major deficiencies are indicated.

- D. All Other Inspections. Normally, there shall be no PSM-related activity on any inspection other than those described above.

**INSPECTION
RESOURCES:**

Appropriate levels of staff training and preparation are essential for compliance activities relating to the PSM standard. In particular, it is anticipated that PQV inspections will be highly resource-intensive; they will therefore require careful planning and coordination. The recommendations included as Appendix G of this instruction may be used as a guide for such planning.

- A. PQV Team Members. Only trained Safety Compliance Officers or Health Compliance Officers (SCO/HCO's) with knowledge of PSM shall be assigned to lead a PQV inspection under this standard.
 1. As a minimum, this training must include the OSHA Training Institute's Course 3300, "Safety and Health in the Chemical Processing Industries." or equivalent training such as that offered by the National Institute of Standards and Technology.

- B. SCO/HCSS With Less Training. Complaint and other unprogrammed inspections pertaining to some sections of the standard may be conducted by SCO/HCO who do not have the training and experience described above, but who are experienced in evaluating other programmatic standards such as hazard communication and lockout/tagout and in evaluating respirator programs.

1. The following sections of 1910.119 may be appropriately evaluated by such SCO/HCSS:
 - (c) Employee participation.
 - (g) Training.
 - (h) Contractors.
 - (k) Hot work permits.
 - (m) Incident investigation.
 - (n) Emergency planning and response.
2. Such SCO/HCSS shall make full utilization of OR-OSHA Central Office resources in arriving at decisions regarding compliance or noncompliance.
3. Nevertheless, to the extent possible, Managers shall attempt to utilize SCO/HCSS with experience and training in the chemical industry to perform such unprogrammed inspections.

**PQV
INSPECTION
SCHEDULING:**

Due to the resource-intensive nature of inspections for compliance with the PSM standard, OR-OSHA will be able to perform only a limited number of PQV inspections each year. A special targeting and scheduling system is therefore necessary to maximize the effective use of inspection resources.

- A. Targeting. OR-OSHA wishes to make the most effective use of its limited resources, and therefore annual data gathered by the Oregon Office of State Marshal Hazardous Substance Information System (HSIS) will be used to generate scheduling lists.
 1. The most current HSIS data base will be sorted to generate a list of all employers who reported having chemicals stored at their facilities in excess of the PSM Threshold Quantities (PSM-TQ). The majority of PSM employers have threshold quantities of ammonia, chlorine, or formaldehyde. Thus OR-OSHA will divide the list into four groups: ammonia, chlorine, formaldehyde, and miscellaneous.
 2. These four PSM-TQ lists will then be weighted based on the relative quantity of chemicals above the TQ. Each weighting group will then be randomized (i.e. each employer in the group will be assigned a random number). OR-OSHA will work through the weighing groups from greatest quantity to least. The high quantity weighting group in each of the four lists will be finished before moving on to the next weighting group in any one of the four lists.

B. Deletion Criteria. An establishment shall be deleted from the list if it:

1. Has received a substantially complete systems safety inspection or PQV inspection within the current or the preceding 5 calendar years; or
2. Is included in a corporate settlement agreement requiring appropriate management systems for process safety; or
3. Is a VPP participant ; or
4. Is a corporate office/headquarters and is not engaged in actual production or physical research operations; or
5. Is not covered because of exclusions in the PSM standard; or
6. Has been the subject of a PSM-related inspection (complaint or referral) in the preceding year during which PSM programs were screened and a referral for a PQV inspection was not made.

NOTE: Determination for deletion shall be made initially, to the extent possible, at the central office when the list is prepared; and/or subsequently, as necessary, at the Field Office level based on local knowledge (e.g., recent inspections, Field Office screening, State Manufacturers' Guide).

SCOPE OF PQV INSPECTION:

Comprehensive inspections under the PSM standard shall evaluate the procedures used by the employer and the process-related contract employers to manage the hazards associated with processes using highly hazardous chemicals. Normally, these inspections will embody a three-fold approach, which for reference is termed PROGRAM-QUALITY-VERIFICATION (PQV).

- A. First, the employer's and the contract employers' **Program** for complying with each of the listed elements of the PSM standard shall be evaluated in accordance with the PSM Audit Guidelines contained in Appendix A of this instruction. (See also (12) of this instruction.)
- B. Second, the **Quality** of the employer's and the contract employers' procedures shall be compared to acceptable industry practices as described in the standard to determine compliance.

- C. Third, **Verification** of the employer's and the contract employers' effective implementation of the program can be made through review of written programs and records of activity, interviews with employees at different levels, and observation of site conditions. The team leader shall select one or more processes as described at (11)G. of this instruction to perform the verification portion of the inspection.

**PQV
INSPECTION
PROCEDURES:**

The procedures given in the FIRM, Chapter 2, shall be followed except as modified in the following sections:

- A. Opening Conference. Where appropriate, the facility safety and health director, Process Safety Manager, or other person capable of explaining the company's Process Safety Management Program shall be included in the opening conference.
1. During the opening conference, SCO/HCSS shall familiarize themselves with the establishment's emergency response procedures and emergency alarms.
 2. SCO/HCSS shall also request that the management representative(s) provide them with a reasonably detailed overview of the chemical (and, where applicable, explosives) process and/or manufacturing operations at the facility, including block flow and/or process flow diagrams indicating chemicals and processes involved.
- B. PSM Overview. Prior to beginning the walkaround inspection, the SCO/HCSS shall request an explanation of the company's Process Safety Management Program including, at a minimum:
1. How the elements of the standard are implemented;
 2. Personnel designated as responsible for implementation of the various elements of the standard; and
 3. A description of company records used to verify compliance with the standard.
- C. Initial Walkaround. After this familiarization, the inspection may begin with a brief walkaround inspection of those portions of the facility within the scope of the standard. Additional walkaround activity may be necessary after selection of the process unit(s). The purpose of the initial walkaround is to:
1. Give SCO/HCSS a basic overview of the facility operations;

2. Allow SCO/HCSS to observe potential hazards such as pipework in risk of impact, corroded or leaking equipment, unit or control room siting, and location of relief devices; and
3. Solicit input from the employee representative concerning potential PSM program deficiencies.

D. Personal Protective Equipment (PPE). In addition to normal inspection protective equipment, SCO/HCSS conducting these inspections shall be provided with flame retardant coveralls for protection from flash fires and with NIOSH approved emergency escape respirators for use during any emergency conditions. PPE shall be appropriate to the environment at the workplace. Special equipment will be necessary in environments containing explosive materials.

1. The SCO/HCSS shall wear flame-retardant coveralls in all areas of the plant where there is potential for flash fires and as may be required by company policy.

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

2. The SCO/HCSS shall carry emergency escape respirators, when necessary, during the walk-around portion(s) of the inspection. SCO/HCSS conducting these inspections shall have received proper training in the use of emergency escape respirators.
3. The SCO/HCSS shall be provided with appropriate alert monitors approved for the environment where they will be used (e.g., HCN, Cl₂) where such devices are necessary.
4. The SCO/HCSS shall ensure that any still cameras and/or video cameras used on these inspections are intrinsically safe for use in the process areas being inspected.

NOTE: SCO/HCSS may use video cameras equipped with a telephoto lens from outside classified areas and/or still cameras without batteries.

E. Documentation to be Requested -- General and Process- Related.
At the conclusion of the opening conference, the SCO/HCSS shall request access to or copies of the documents listed at (11)E.1. through (11)E.13. below. Initially, to expedite the inspection process, only access to documents should be requested. During the inspection, as potential violations of the standard are observed, copies of the written documentation described below shall be requested to substantiate citations.

1. OSHA 200 Logs for the past 3 years for both the employer and all process-related contractor employer(s).
2. Employer's written plan of action regarding the implementation of employee participation.
3. Written process safety information for the unit(s) selected (see (11)G.), if available, 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 the process hazard analyses (PHA).

4. Documented priority order and rationale for conducting process hazard analyses; copies of any process hazard analyses performed after May 25, 1987; team members; actions to promptly address findings; written schedules for actions to be completed; documentation of resolution of findings; documentation verifying communication to appropriate personnel; and 5-year re-validation of original PHA required by standard.
5. 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 over ended valves, opening process equipment or piping, excavation, and control over entrance into a facility of maintenance, laboratory, or other support personnel.

6. 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 job for employees already involved in operating a process on May 26, 1992, who have not received initial training; and training material.
7. Pre-startup 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.
8. Written procedures and schedules to maintain the ongoing integrity of process equipment; the relevant portions of applicable manufacturers' instructions, codes, and standards; and inspection and tests performed on process equipment in the unit(s) selected.
9. Hot work permit program and active permits issued for the unit(s) selected.
10. Written procedures to manage change to process chemicals, technology, equipment and procedures; and changes to facilities that affect a covered process.
11. Incident investigation reports for the unit(s) selected, resolutions and corrective actions.
12. Written emergency action plan including procedures for handling small releases and evidence of compliance with 1910.120(a), (p), and (q), where applicable.
13. The two most recent compliance audit reports, appropriate responses to each of the findings, and verifications that deficiencies have been corrected.

F. Documentation To Be Requested -- Contractor-related. The following information relating to contractor compliance shall be requested:

1. Documentation from Employer:
 - a. Information relating to contract employers' safety performance and programs;

- b. Methods of informing contract employers of known potential hazards related to contractor's work and the process and applicable provisions of the emergency action plan;
- c. Safe work practices to control the entrance, presence and exit of contract employers and contract employees in covered process areas;
- d. Evaluation of contractor employer performance in fulfilling responsibilities required by the standard;
- e. Contract employee injury and illness logs related to work in process areas; and
- f. A list of unique hazards presented by contractors' work or hazards found in the workplace that have been reported to the employer.

2. Documentation from Contract Employer:

- a. Records showing employees receive training in and understand safe work practices related to the process on or near which they will be working to perform their jobs safely;
- b. Known potential fire, explosion or toxic release hazards related to job, and applicable provisions of emergency action plan; and
- c. A list of unique hazards presented by contractors' work or hazards found in the workplace that have been reported to the employer.

NOTE: The documentation described at (11)E. and (11)F.1. may also be required of the contract employer, depending on the scope of the contract employer's activities.

G. Selection of Process(es). The team leader shall select one or more processes within which to evaluate compliance with the standard. This selection shall be based on the factors listed below, and shall be documented in the case file:

- 1. Factors observed during the walkthrough;
- 2. Incident reports and other history;

3. Company priorities for or completed process hazard analyses (PHA);
4. Age of the process unit;
5. Nature and quantity of chemicals involved;
6. Employee representative input;
7. Current hot work, equipment replacement, or other maintenance activities; and
8. Number of employees present.

**COMPLIANCE
GUIDELINES
FOR SPECIFIC
PROVISIONS
OF 1910.119:**

Guidelines for assessing compliance with the provisions of the PSM standard are provided in Appendix A of this instruction.

- A. SCO/HCSS shall use the guidance contained in Appendix A during all enforcement activities related to the PSM standard.
- B. Clarifications and interpretations are provided in Appendix B of this instruction. Appendix B (or a subsequent revision) shall normally be the first point of reference in interpreting 1910.119.

NOTE: Appendix B will be updated on an ongoing basis through page changes to this instruction, as more interpretations are developed. SCO/HCO's must therefore take care to ensure that their reference copies are up-to-date.

CITATIONS:

Citations for violations of the PSM standard shall be issued in accordance with the FIRM, Chapters 3 and 4, with the following additional directions:

- A. Classification. The requirements of the PSM standard are intended to eliminate or mitigate the consequences of releases of highly hazardous chemicals. The provisions of the standard present closely interrelated requirements, emphasizing the application of management controls when addressing the risks associated with handling or working near hazardous chemicals.
 1. Any violation of the PSM standard, therefore, is a condition which could result in death or serious physical harm to employees.
 2. Accordingly, violations of the PSM standard shall normally not be classified as "other- than-serious."

3. However, the determination of the probability and severity of any violation shall follow the guidelines in the FIRM and the rules in OAR 437, Division 1.
- B. Use of Appendix A. Appendix A, PSM Audit Guidelines, is constructed as a series of questions relating to each of the pertinent provisions of the standard.
1. The questions are designed to elicit a determination of "Yes" or "No" by the SCO/HCO's as to whether compliance with the provision has been met.
 2. A determination of "No" for any provision indicates noncompliance; thus, any "No" shall normally result in a citation for a violation of that provision.
 3. The SCO/HCO's shall thoroughly document each such determination in the case file.

**NON-MANDATORY
APPENDICES
TO THIS
INSTRUCTION:**

This instruction contains two non-mandatory appendices that are designed to provide additional compliance assistance.

- A. Appendix E is still being developed and is designated as "Reserved."
- B. Appendix G, Recommended Guidelines for PQV Inspection Preparation, is intended as an aid to Regional and Area Offices in planning resources for PQV and other PSM-related inspections.

**RECORDING
IN IMIS:**

Information about PSM-related inspections shall be recorded in IMIS following current instructions given in the IMIS manual. Refer to Appendix H of this instruction for additional guidance.

**EFFECTIVE
DATE:**

This directive is effective immediately and will remain in effect until cancelled or superseded.

APPENDIX A

PSM AUDIT GUIDELINES

Purpose.

This appendix contains audit guidelines intended to assist the SCO/HCO in investigating an employer's compliance with the PSM standard. It shall be used in conjunction with Appendix B, Clarifications and Interpretations of the PSM Standard, as the primary source of compliance guidance on 1910.119.

Structure.

The guidelines present a Program Summary, Quality Criteria References, and a Verification checklist for each of the PSM elements.

1. Guidelines for paragraphs **c, g, h, k, m, and n** are designed so that SCO/HCSS who may not be specifically trained in chemical process plants or in the PSM standard can make a preliminary review of the required elements.
2. Guidelines for elements **d, e, f, i, j, l, o, and p** are oriented toward more detailed investigations.

Use of the Verification Checklist.

The verification of each program element is divided into three parts: Records Review, On-Site Conditions and Interviews.

The Records Review section describes the documentation of the programs as required by the PSM standard. During a preliminary inspection, the SCO/HCO shall review the documentation for the entire PSM program to ascertain that all of the elements are developed.

1. Sections labeled On-Site Conditions and Interviews guide the SCO/HCO in confirming that the programs are implemented. This confirmation involves **observing** conditions and procedures, and **interviewing** the operators, maintenance personnel, engineering support staff, contractors and contractor employees, as appropriate, to determine whether the implemented program matches the program outlined by the documentation.

NOTE: Several questions in the "Interviews" sections refer to interviewing **engineers**. The PSM standard does not require an employer to employ engineers, and these questions should not be construed as imposing a new requirement that an employer do so. All questions in this appendix that refer to interviews of engineers shall be understood to mean "engineers, if any, or other qualified persons capable of providing the information requested."

2. The SCO/HCO shall initially perform a representative number of observations and interviews for elements c, g, h, k, m, and n. A more detailed investigation will cover all 14 elements. During these detailed assessments, the SCO/HCO shall review components from a representative number of processes, if multiple processes exist. To confirm implementation, the SCO/HCO shall compare the conditions and the interview results with both the minimum requirements of the PSM standard and the program outlined by the employer's documents.

Audit Guideline Documentation.

The Audit Guidelines are constructed as a series of questions relating to each of the pertinent provisions of the standard.

1. The questions are designed to elicit a determination of "Yes" or "No" by the SCO/HCO as to whether compliance with the provision has been met. This shall be indicated in the column labeled Met Y/N. A "Y" or "Yes" in this column indicates the subsection meets requirements. An "N" or "No" indicates the employer does not meet the standard and an "NA" signifies that the subsection does not apply.
2. A determination of "No" for any provision indicates noncompliance; thus, **any "No" shall normally result in a citation for a violation of that provision.**
3. The SCO/HCO shall thoroughly document each such determination in the case file.

The Field Note Reference(s) space is used to cross-reference the PSM subsection with the SCO/HCO's field notes. Field notes need not be rewritten when using these guidelines. The SCO/HCO may record field note page numbers, videotape frame identification, photograph identification, and other documentation that refers to the requirements of the standard's elements.

Basic Audit Information.

In order to gather the information needed to audit the program, the SCO/HCO shall answer the following questions for each element:

Who? What? When? Where? Why? and How?

1. Who are the officials responsible for developing and implementing each of the program elements?
2. What are the requirements and the contents of each program element?
3. When are the required actions for each element completed and when are they required to be completed?
4. Where have actions been implemented or changed?
5. Why have the implementation decisions and priorities been made as recorded in the PSM documentation?

6. How is the program implemented and how is the program's effectiveness evaluated and improved (monitoring performance, followup and closure of outstanding items, etc.)?

Interrelationship of Elements.

An essential part of verifying program implementation is to audit the flow of information and activities among the elements. When information in one element is changed or when action takes place in one element that affects other elements, the SCO/HCO shall review a sample of the related elements to see if the appropriate changes and followup actions have taken place.

The following example demonstrates the interrelationship among the elements:

During a routine inspection of equipment (**Mechanical Integrity**), the maintenance worker discovers a valve that no longer meets the applicable code and must be changed. Because the type of valve is no longer made, a different type of valve must be selected and installed (**Management of Change**). The type of valve selected may mandate different steps for the operators (**Operating Procedures**) who will require training and verification in the new procedures (**Training**). The rationale for selecting the type of valve must be made available for review by employees and their representatives (**Employee Participation**).

When the new valve is installed by the supplier (**Contractors**), it will involve shutting down part of the process (**Pre-startup Safety Review**) as well as brazing some of the lines (**Hot Work Permit**). The employer must review the response plan (**Emergency Planning**) to ensure that procedures are adequate for the installation hazards.

Although **Management of Change** provisions cover interim changes, after the new valve is in place the **Process Safety Information** will have to be updated before the **Process Hazard Analysis** is updated or revalidated, to account for potential hazards associated with the new equipment. Also, inspection and maintenance procedures and training will need to be updated (**Mechanical Integrity**).

In summary, 11 PSM elements can be affected by changing one valve. A SCO/HCO would check a representative number of these 11 elements to confirm that the required followup activities have been implemented for the new valve.

Three key elements shall be routinely reviewed to verify that changes have been implemented. They are:

- ^{s_y} Operating Procedures;
- ^{s_y} Process Hazard Analysis; and
- ^{s_y} Training.

These elements shall be crosschecked to see if they show that the changes have been followed through to completion.

APPENDIX B

Clarifications and Interpretations of the PSM Standard

The guidance contained in this appendix is provided for compliance assistance. It shall be followed in interpreting the PSM standard for compliance purposes. Unless otherwise noted, all paragraph citations refer to 29 CFR 1910.119. In Oregon this is OAR 437-02-1910.119.

This appendix contains clarifications agreed to in a settlement agreement dated April 5, 1993, between OSHA, the United Steelworkers of America, the Oil, Chemical and Atomic Workers International Union, and the Building and Construction Trades Department of the AFL-CIO. The settlement agreement clarifications reflect modifications jointly and cooperatively agreed to by the above parties and by the Chemical Manufacturers Association, the American Petroleum Institute, the Dow Chemical Company, and the National Petroleum Refiners Association.

Where possible, clarifications and interpretations have been presented in a question-and-answer format.

NOTE: OSHA plans to include additional clarifications and interpretations in this appendix through future page changes to this instruction.

Registration

Do covered establishments have to register with OSHA?

No. There is **no** requirement that establishments covered by the standard register with or otherwise notify OSHA.

Explosives -- fireworks manufacture

How does the PSM standard apply to pyrotechnics (fireworks) and explosives?

The PSM standard amended the scope of 29 CFR 1910.109, Explosives and blasting agents, by revising paragraph (k),

Appendix C

References for Compliance with the PSM Standard

1. OSHA Instruction CPL 2.45B, June 15, 1989, the Revised Field Operations Manual (FOM).
2. OSHA Instruction STP 2.22A, CH-2, January 29, 1990, State Plan Policies and Procedures Manual.
3. OSHA Instruction ADM 1-1.12B, Dec. 29, 1989, Integrated Management Information System (IMIS) Forms Manual, Chapter V.
4. OSHA Instruction CPL 2-2.45, Sep. 6, 1988, Systems Safety Evaluation of Operations with Catastrophic Potential.
5. "Safety and Health Program Management Guidelines," 1989; U.S. Department of Labor, Occupational Safety and Health Administration.
6. "Safety and Health Guide for the Chemical Industry," 1986, (OSHA 3091); USDOL, OSHA.
7. "Review of Emergency Systems," June 1988; U.S.E.P.A., Office of Solid Waste and Emergency Response, Washington, DC 20480.
8. "Guidelines for Hazard Evaluation Procedures," Center for Chemical Process Safety of the American Institute of Chemical Engineers; 345 East 47th Street, New York, NY 10017.
9. "Plant Guidelines for Technical Management of Chemical Process Safety," Center for Chemical Process Safety (CCPS) of The American Institute of Chemical Engineers (AIChE).
10. "Guidelines for Safe Storage and Handling of High Toxic Hazard Materials," AIChE, CCPS.
11. "Guidelines for Vapor Release Mitigation," AIChE, CCPS.
12. "Process Safety Management (Control of Acute Hazards)," Chemical Manufacturers Association (CMA).
13. "Evaluating Process Safety in the Chemical Industry," Chemical Manufacturers Association; 2501 M Street NW, Washington, DC 20037.
14. "Safe Warehousing of Chemicals," Chemical Manufacturers Association.
15. "A Managers Guide to Reducing Human Errors Improving Human Performance in the Chemical Industry," Chemical Manufacturers Association.

16. "Improving Owner and Contractor Safety Performance," API Recommended Practice 2220.
17. "Management of Process Hazards," American Petroleum Institute (API) Recommended Practice 750, First Edition, January 1990; 1220 L Street NW, Washington, DC 20005.
18. "Sizing, Selection, and Installation of Pressure Relieving Devices," Part 1, July 1990, API RP 520.
19. "Guide for Pressure relieving and Depressuring Systems," Nov. 1990, API RP 521.
20. "Avoiding Environmental Cracking in Amine Units," Aug. 1990, API RP 945.
21. "Pressure Vessel Inspection Code: Inspection, Rating, Repair, and Alteration," June 1989, API STD 510.
22. "Inspection of Piping, Tubing, Valves, and Fittings," API RP 574.
23. "Prevention of Brittle Fracture of Pressure Vessels," API RP 920.
24. "Accident Investigation * * * A New Approach," 1983, National Safety Council; 444 North Michigan Avenue, Chicago, IL 60611-3991.
25. "Fire & Explosion Index Hazard Classification Guide," 6th Edition, May 1987, Dow Chemical Company; Midland, Michigan 48674.
26. "Chemical Exposure Index," May 1988, Dow Chemical Co.
27. "Pressure Vessels, Section VIII," The American Society of Mechanical Engineers (ASME).
28. "Chemical Plant and Petroleum Refinery Piping," ASME B31.3.
29. "Personnel Qualification and Certification in Nondestructive Testing," American Society of Nondestructive Testing, Recommended Practice No. SNT-TC-1A.
30. "Prevention of Furnace Explosions/Implosions in Multiple Burner Boiler Furnaces," National Fire Protection Association, NFPA 85C.
31. "Purged and Pressurized Enclosures for Electrical Equipment," NFPA 496.
32. "Spacing of Facilities in Outdoor Chemical Plants," Factory Mutual Loss Prevention Data Sheet, 7-44.
33. "Chemical Process Control and Control Rooms," Factory Mutual Loss Prevention Data Sheet, 7-45.

34. "National Board Inspection Code, A Manual for Boiler and Pressure Vessel Inspectors," The National Board of Boiler and Pressure Vessel Inspectors, 1992.
35. Gideon, James A., and Thomas W. Carmody, "Process Safety Management: Resources from the American Institute of Chemical Engineers for Use by Industrial Hygienists," American Industrial Hygiene Association Journal (53), June 1992.

Additional References on Explosives Manufacture:

36. Institute of Makers of Explosives Safety Library Publications, 1120 19th Street, N.W., Suite 310, Washington, D.C. 20036:
 - No. 1 Construction Guide for Storage Magazines
 - No. 2 The American Table of Distances
 - No. 3 Suggested Code of Regulations for the Manufacture, Transportation, Storage, Sale, Possession, and Use of Explosive Materials
 - No. 4 "Do's and Don'ts" Instructions and Warnings
 - No. 12 Glossary of Industry Terms
 - No. 17 Safety in the Transportation, Storage, Handling and Use of Explosives
 - No. 20 Safety Guide for the Prevention of Radio Frequency Radiation Hazards in the Use of Electrical Blasting Caps
 - No. 22 IME Standard for the Safe Transportation of Class C Detonators (Blasting Caps) In a Vehicle with Certain Other Explosives

37. Department of Defense (DOD) Standards:

- | | |
|--------------|--|
| DOD 5154.4S | DOD Ammunition & Explosives Safety Standards |
| DOD 4145.26M | DOD Contractor's Safety Manual for Ammunition, Explosives and Related Dangerous Material |

38. National Fire Protection Association (NFPA) Codes:

- | | |
|----------|--|
| NFPA 495 | Code for the Manufacture, Transportation, Storage and Use of Explosive Materials |
| NFPA 77 | Static Electricity |
| NFPA 78 | Lightning Protection Code |

Training Program References:

39. Synthetic Organic Chemical Manufacturers Association (SOCMA) Level I Chemical Process Operator Certification Training Trainee Manual, May 1990; NUS Corporation, Fossil and Industrial Training Services Department, 910 Clopper Road, Gaithersburg, MD 20877-0962.

Appendix D

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Appendix E

SAMPLE LETTER TO BE PROVIDED TO EMPLOYER FOLLOWING SCREENING FOR PSM COVERAGE

Dear Employer:

The Oregon Occupational Safety and Health Division's (OR-OSHA) evaluation of your workplace and the information you have provided indicate that your establishment is covered by OR-OSHA's standard for Process Safety Management of Highly Hazardous Chemicals, OAR 437-02-1910.119.

As you may know, the requirements of this standard are intended to protect employees by preventing or minimizing the consequences of accidents involving highly hazardous chemicals. OR-OSHA believes that compliance with the standard is important for ensuring worker protection.

Accompanying this letter is a copy of OAR 437-02-1910.119. The following publications may be helpful to you in complying with this rule and are available through OSHA Region X, Seattle, Washington, at (206) 553-5930.

- (1) "Process Safety Management," OSHA 3132, which provides information on the standard and its requirements, and
- (2) "Process Safety Management -- Guidelines for Compliance," OSHA 3133.

These guidelines are not a substitute for the standard itself, which is reprinted in the "Process Safety Management" booklet.

Your workplace will be included in an overall listing of all establishments known to be covered by the standard. OR-OSHA may schedule an inspection of your establishment in the future to evaluate your compliance with the standard.

This standard is relatively new, and OR-OSHA realizes that affected employers may have many questions. After reading the materials provided, please feel free to direct any questions to the OR-OSHA Standards and Technical Resources Section at (503) 378-3272.

Sincerely,

Signature block for Manager

Appendix F

Recommended Guidelines for PQV Inspection Preparation (Nonmandatory)

The following guidelines are suggested as background and preparation for a PQV inspection. These are suggested actions only, and shall in no case take precedence over the guidance presented elsewhere in this instruction.

OFFICE COORDINATION

Coordination within the Field Office from which the inspection is being conducted is absolutely essential in the orderly conduct of a PQV inspection. The Manager of Enforcement and all those involved in a PQV inspection must commit the resources with the understanding that the project is long-term, possibly several weeks or months. It is imperative that team members complete all outstanding assignments prior to the PQV inspection. Equally important, team participants should not be directed or "asked" to do assignments while they are engaged in the PQV inspection. An obvious exception would be informal and formal hearings, over which the Field Office has little control.

The Manager of Enforcement should designate a contact person in the Field Office to coordinate and oversee all aspects of the inspection. The contact person should be a Manager (either safety or industrial hygiene (IH)) who is familiar with the PQV concept. In addition to providing Field Office coordination, the contact person would review the entire case file/report. The team leader would communicate at least weekly with the contact supervisor, who would then brief the Manager of Enforcement as appropriate.

INSPECTION TEAM COMPOSITION

By design, a PQV inspection is a large and complex undertaking, to be accomplished by a select, well-trained team. All members of the team must be experienced journey or senior level compliance officers who are familiar with the chemical industry and have taken the appropriate OSHA training. Newer compliance officers can be utilized in the inspections, but not as a substitute for regular team members.

The team should consist of two safety compliance officers, two industrial hygiene compliance officers, an administrative support person and a construction specialist. The team leader could be from either discipline in the team, but preferably a safety specialist, due to the fact that most of the critical PSM and construction related hazards reside in the area of safety.

The team leader should be a Senior Compliance Officer with experience in large team inspections. He or she should have excellent organizational and communication skills, both oral and written. It would also be of benefit that the team leader be knowledgeable in word processing and data base management computer operations. Since the team leader will be the focal point during the conduct of the inspection, that person should also have demonstrated leadership abilities. The entire team, the company, employees/unions and other OR-OSHA personnel will look to the team leader for direction and answers to the many questions that will arise during the course of the inspection.

The team leader is responsible for the overall conduct of the inspection including planning, onsite activities and report preparation. The leader would assign the various inspection areas to team members in accordance with their expertise and abilities, and determine what, if any, special expertise is needed. Additional responsibilities include:

1. Keeping the Field Office contact manager apprised of activities;
2. Providing and tracking requests for documents;
3. Resolving problems with the company;
4. Ensuring that the report addresses all questions in the directive.

An administrative support person would greatly increase the overall efficiency of the inspection. This position would be ideal for an accommodated Safety Compliance Officer/Health Compliance Officer (SCO/HCO) with some computer skills and organizational abilities. The support person would answer directly to the team leader and would be responsible for organizing, labeling and filing the many documents that will become part of the case file. An accommodated SCO/HCO could also review the documents and document requests to assure the request was properly fulfilled. In addition, an accommodated SCO/SCO could assist the inspecting team members with the many interviews that will be conducted. The support person would also be responsible for the inspection supplies and equipment.

Safety and IH team members are responsible for carrying out the PQV inspection activities under the direction of the team leader. They must keep the team leader apprised of their activities and potential problems when they arise. The construction specialist would work for the most part independently of the rest of the team, under the general direction of the team leader. Some crossover of inspection areas is to be expected, as many of the contractors and company responsibilities overlap.

PRE-INSPECTION PREPARATION

Effective planning and preparation is essential to the efficient implementation and successful completion of any large inspection, especially a PQV. Exhibit 1 provides an outline that can be used as a guide to plan and prepare for a PQV inspection. Establishment histories can be obtained and reviewed well in advance of the target date for the inspection. The inspection strategy and scheduling should be done after the team has been selected. A pre-inspection meeting with all members and the Field Office contact person should be held prior to entry.

The case file begins in the planning and preparation stage. Any documents received, such as micro to host reports, citations and PSM-related findings from other OR-OSHA Field Offices and from federal OSHA must be logged and identified to allow for easy retrieval. An activity log/diary should be started to record all pertinent actions taken. A computer data base management program is recommended to keep track of the document requests and to provide a ready index of the documents that have been obtained. With this type of system it would be easy to search for pertinent documents by using the identification number, topic of document, company identification number, date of request, etc., and to ensure that various members of the team do not duplicate requests for documents.

The team should develop a weekly schedule of activities, taking into account travel days, holidays, start time, stop time, company briefings and internal briefings. Time should be allotted during the inspection week to complete necessary paperwork and documentation and tie up loose ends.

DOCUMENTS

PQV inspections will require compliance officers to review numerous company documents. Many of these documents will become part of the case file as documentation for potential citations or for documentation of the required PSM elements. It is imperative that these documents be organized and identified so that they may be readily referenced and reviewed. It is highly recommended that all requests for copies of company documents be in writing. A standard document request format should be established and should contain at least the following information:

1. Who is the requester
2. To whom the request is made
3. Identity of the document (in company terms if possible)
4. Company document number
5. Date of request
6. Priority for response
7. Internal I.D. number
8. Date request fulfilled
9. Comment section (did the response fulfill request).

It should be noted that there is no universal language used to identify documents. Different companies have different names for the same type of document. It is therefore essential to clearly communicate what information is needed and desired prior to writing the request. The document requests should be in duplicate: one copy for the company and the other to be retained in the case file. To avoid long discussions and legal department involvement, all documents obtained should be considered proprietary information.

Prior to the documents actually being received, a filing system should be developed. The system should be secure, accessible to all team members and ensure that individual documents are easily retrievable. The administrative support person could manage the filing system to ensure its continued effectiveness. **NOTE:** Only appropriate documents should be maintained in the filing system; field notes, document "clips", and document review/evaluation notes should remain with the field notes.

Exhibit 2 contains a list of those documents most commonly requested. It is divided into two sections: Pre-Unit Selection and Unit-Specific Documents.

INSPECTION FACILITIES

The PQV team needs a suitable work area/command center from which the inspection can be conducted and coordinated. In most cases PQV inspections conducted by OR-OSHA will occur in areas close to an OR-OSHA Field Office. In these cases the inspection work area/command center will be established at the field office. Where this is not the case, except in the most unusual of circumstances, the company will provide the requisite onsite space. Almost any room will suffice, providing it meets some basic requirements. The work area must be secure 24 hours a day with access limited to the inspection team and those company officials who would respond in an emergency. This is important so as to preclude taking boxes of documents and equipment in and out each day. The room should have sufficient desks and/or tables for reviewing documents and writing the report. Provisions should be made for communications -- one phone line as a minimum. Outgoing calls should be charged on the Field Office calling card. Where phone service is not provided, the team should have a portable cellular phone.

Sufficient power outlets should be available for charging pumps, batteries and other inspection equipment.

The inspection team will need copies of a number of documents. It is hoped that the company would provide copying services or the use of a copy machine. The administrative support person could make the copies should the company not provide these services.

If the inspection is to be conducted at a remote site such that the Field Office cannot be used as the command center, the team leader must determine as soon as possible, what -- if any -- of the necessary facilities the company will provide. If the company does not provide all of the necessary facilities voluntarily, or puts disruptive restrictions on their use, the Manager of Enforcement should be contacted as soon as possible so that alternate facilities can be arranged. This may result in the use of a rented copier(s) and office space.

INSPECTION EQUIPMENT

Upon entry to the site, the inspection team should be fully prepared with all necessary inspection equipment and personal protective equipment. Exhibit 3 contains a list of equipment that may be useful to prepare for the inspection. In addition, an inspection "kit" is outlined which can be used to set up a command center outside the field office. Some of the items in the "kit" may appear to be trivial; however, all of these items will be needed at some time during the inspection. It may not be practical to go back and forth to the office or a store to get these items, particularly if the inspection site is in an extremely remote location. The administrative support person would be responsible for maintaining adequate supplies throughout the inspection.

CRITICAL INSPECTION AREAS

It is essential that team members have specific subjects and areas to investigate. The team leader, with input from the team members, should assign the inspection areas prior to entry. This will help to avoid confusion and duplication of effort. In addition, the team members will be able to be better prepared for their individual tasks.

As inspection subjects are completed, the information should be reviewed with the team leader before going on to the next assignment. The state of compliance or noncompliance within any given area may require the team leader to modify the assignment list so as to make the most of the resources available.

CONTRACTORS

Contractors are an integral part of any PSM inspection. There may be only a few contractors or dozens, with several hundred contract employees, depending on whether the facility is undergoing a shutdown or turnaround.

It is imperative that, upon entry, the scope of the contractor activity be determined. The construction specialist on the team will have to formulate an inspection plan and set appropriate priorities. It is not the intent of the PQV inspection to inspect all outside contractors that are on-site, rather to inspect only those contractors who may be exposed to, or could cause or be affected by a catastrophic incident. Food service workers, certain janitorial employees and similar activities would not normally be inspected. Remote construction projects not associated with catastrophic potential would not necessarily be inspected.

The term "contractor" is not limited to construction type activities. Many chemical facilities use contract maintenance workers, vessel and piping inspectors, vessel heat treating, cleaning, engineering and similar non-construction contractors who remain at the facility year round or are called in at regular intervals. They are used to supplement existing plant personnel for regular duties and for special projects.

A shared responsibility for both contractors and company is quality assurance. It is essential that all materials and workmanship meet engineering standards. There should be sufficient checks to ensure that materials, such as the proper alloy or carbon steel pipe is used, and that the studs and/or bolts are of the proper size and grade. This is especially important in contractor supplied materials.

CRITICAL EXPERTISE

Situations may arise in a PQV inspection that are beyond the technical expertise of the team members. A list should be developed identifying OR-OSHA personnel and/or private sector experts and how they may be contacted. Areas where this expertise may be needed are:

1. Pressure equipment
2. Fire protection (fire brigades)
3. Facility siting
4. Emergency medical services
5. Hazardous waste operations
6. Dispersion modeling & incident command centers
7. Process hazard analysis/HAZOPS
8. Process chemistry
9. Industry practice

By no means is this list all-inclusive. It should be modified as needed to reflect current technology and hazards.

DOCUMENTATION

In order to withstand the probable legal challenges, all items must be thoroughly documented. Since the team will be made up of journey- and senior- level SCO/HCOs, good documentation is to be expected. All OR-OSHA 440-2110 (2110) forms or OR-OSHA-1B forms must be complete and legible. Shortcuts for employer knowledge such as "should have known" or "reasonable diligence" are not acceptable. Appropriate company documents, logs, procedures, permits, etc., should be referenced on the 2110 for the particular violation.

Photographic documentation, either still camera or videotape, should be reviewed as soon as practicable to ensure that the condition or violation is appropriately depicted. Retake any photos or videos that are not good quality.

CASE FILE AND REPORT PREPARATION

A PQV inspection will take weeks or months of onsite activity and will generate a large amount of paper, both in field notes and documents. It is essential that the paper flow be organized and well maintained. This will result not only in a more efficient onsite survey, but will greatly reduce the write-up time.

A daily log, either manual or computer generated, should be maintained indicating the team members onsite, daily activities, meetings, problems, or other details, as necessary. All OR-OSHA-2110 forms should be completed as the violation is observed, documenting the employees exposed, the date, time, location and management representative who accompanied the SCO/HCO. Each instance of a violation should have a separate 2110. Where multiple violations are noted on a form, the form should be photocopied and highlighted showing the appropriate instance and corresponding documentation. Alleged violation descriptions should be written as soon as practicable, while the hazard is fresh in the mind of the SCO/HCO. Multi-employer policy citations must be coordinated with respect to exposing, controlling, correcting and creating employers' files.

Case file structure and organization must begin prior to entry into the facility. All documents must be logged and an index (computer preferred) generated, indicating the subject matter, document identification number, file number and the location of the document (box number). This is essential, as these documents may have to be referenced or retrieved many times during the course of the inspection and the review process. A data base management program for the PC's would be extremely beneficial. Computer disks should be backed up daily, or more often as necessary. The photos and videotape taken during the inspection should be properly identified with photographer, date, roll or tape number and subject. They should be kept in a separate file.

EXHIBIT 1

PRE-INSPECTION PREPARATION

- A. Previous OR-OSHA and OSHA history - nationwide search
 - 1. all citations and/or reports
 - 2. litigation results
 - 3. outstanding issues, items in contest
 - 4. health response team reports
 - 5. NIOSH evaluations if any

- B. DEQ and EPA history
 - 1. reportable releases
 - 2. reports of any kind
 - 3. complaints and pending actions

- C. Other Agency histories - local/State/Federal
 - 1. Dept. of Transportation
 - 2. Coast Guard
 - 3. ESDA/FEMA
 - 4. State Fire Marshal
 - 5. State Boiler and Pressure Vessel
 - 6. Oregon Dept. of Agriculture

- D. Previous OSHA PetroSEP/PSM inspection results
 - 1. Citations
 - 2. team members & expertise
 - 3. settlement agreements or litigation results

- E. Identify contact people -- other jurisdictions
 - §vEPA, DEQ, DOT, ODOT, Coast Guard, etc.

- F. Acquire necessary codes or standards
 - §vASME, API, ANSI, NFPA, etc.

INSPECTION STRATEGY

- A. Identify critical needs and expertise
- B. Select team members
- C. Identify expertise within the team
- D. Identify critical inspection areas
- E. Assign areas according to expertise
- F. Identify areas lacking expertise
 - 1. provide training
 - 2. bring in additional resources
- G. Develop a tracking system for documents
- H. Develop a daily log of on-site activities
- I. Identify known scheduling conflicts
 - Team members and/or employer
- J. Develop weekly schedule of activities
 - 1. travel, write up, start/stop times
 - 2. employer/employee and Field Office updates

PLANNING AND SCHEDULING

- A. Create a Projected Time Line
 - 1. Projected records and program review time
 - 2. Projected walkaround time
 - 3. Projected write-up time
- B. Resource Scheduling
 - 1. Team leader and construction specialist enter first for program and records review; present document request list.
 - 2. Full team enters following acquisition of requested documents for program/record review & walkaround
 - 3. Expert assistance enters as needed
- C. Equipment Acquisition
 - 1. Required PPE
 - 2. Technical equipment

EXHIBIT 2

DOCUMENT REQUEST LIST

I.PRE-UNIT-SELECTION

- A. OSHA 200 logs for past 3 years
 - 1. Employer
 - 2. Contractors

- B. Incident reports
 - 1. Near miss
 - 2. Fires
 - 3. All releases (cross check with DEQ and EPA documents)

- C. Site plan/Facility overview

- D. Simplified flow diagrams

- E. All permit procedures
 - 1. Confined space
 - 2. Hot work
 - 3. Others

- F. Hazard communication

- G. Overall emergency response plan (emergency action plan, evacuation plan)

- H. Lockout/Tagout

- I. PPE plan/Requirements

- J. Audits
 - 1. Internal
 - 2. Corporate
 - 3. Contracted
 - 4. Insurance/Consultant

- K. Fire brigade records
 - 1. Organizational statement
 - 2. Training records
 - 3. Callouts/Responses
 - 4. Roster
 - 5. Equipment inspection

- L. Respirator program and inspections (emergency use)

- M. Infection/Exposure control program (bloodborne)

- N. Safety and health outline
 - 1. Minutes of safety and health committee meetings and walkaround reports
 - 2. Committee roster
- O. Disaster preparedness program
- P. Facility description
 - 1. Size, capacity, age (units)
 - 2. History
- Q. Turnaround/Shutdown schedule (not turnaround plan)
- R. Safety and health complaints
- S. Accident investigation logs
- T. Industry hazard alerts (fire and explosion information from other facilities) ("Lessons Learned" by American Petroleum Institute)
- U. Process hazard analysis scheduling procedure

II.UNIT-SPECIFIC DOCUMENTS

- A. Written operating procedures
 - 1. All current procedures
 - a. Normal
 - b. Abnormal
 - c. Emergency
 - 2. Startup procedures
 - a. Partial (swoop down procedures)
 - b. Full (cold)
 - 3. Shutdown procedures
 - a. Normal
 - b. Emergency
 - 4. Upset conditions (beyond normal operating parameters)
- B. Process safety information
 - 1. Process chemistry
 - 2. Capacity (volume)
 - 3. Operating temperatures and pressures
 - ^s_y Alarm settings (high, high-high, low, low-low, etc.)
 - 4. Operating parameters
 - 5. Consequences of deviations
 - 6. Flow rates
- C. Operating logs (past 6 months)
 - 1. Foreman
 - 2. Operator
 - 3. Manual and Computer
- D. Piping and instrumentation diagrams (P&IDS)

1. Working (unit level) **NOTE: Must be current.**
 2. Archival
 3. Simplified (detailed, at a later date)
 4. Product
 5. Utility
 6. Fire protection
- E. Training records
1. Operator and supervisory
 2. Training records (summary) for all safety and health programs
 - a. Hazard communication
 - b. Emergency response
 - c. Bloodborne
 - d. Respirators and PPE
 - e. SCBA
 - f. Fire
 - g. Others
- F. Permits for the units^s
_y Hot work, confined space, etc.
- G. Pressure vessel records
1. For at least 20 different vessels, selection based on age, pressure, temperature, toxic chemical involved (corrosive nature, i.e. sulfuric acid), repair history, environmental stress cracking, etc.
 2. Inspection records
 - a. All previous records
 - b. Analysis of defects
 - c. Nondestructive testing records
 - d. Inspection schedule and frequency
 - e. Internal
 - f. External
 - g. On-stream
 - h. Special
 - i. American Society of Mechanical Engineers U-1 and U-2 records
 3. Inspector qualifications
 - a. American Society of Nondestructive Testing (ASNT) or equivalent levels (1, 2, or 3)
 - b. Roster of inspectors
 - c. Training history and documentation
 4. Pressure relief valve (PRV) inspection records
 5. Selection criteria for PRV's, vessels, etc.
- H. Unit plot plan detailed
- I. Instrumentation calibration records
- J. Unit emergency response/Action plan
- K. Control room blueprint and schematic

- L. Work orders
 - 1. Outstanding
 - 2. Obtain a sample of completed work order
 - 3. Written work order procedure
 - 4. All safety work orders
- M. Environmental sampling records
 - 1. Noise
 - 2. Air contaminants/Toxins
 - 3. Asbestos
- N. Product sampling procedures
- O. Calibration records for IH sampling equipment
- P. Pre-startup review
- Q. Rotating equipment inspection records
 - 1. Schedule
 - 2. Repair records
- R. Operator certification
- S. Flare system diagram (Piping and Instrument Diagram)
- T. Process hazard analysis (Haz-Op, What-If, etc.)
- U. Piping inspection program
 - 1. Records/Results
 - 2. Schedule
 - 3. Inspector qualifications

EXHIBIT 3

INSPECTION EQUIPMENT

I.PERSONAL PROTECTIVE EQUIPMENT

- A. Standard PPE per directive
 - 1. Safety shoes
 - 2. Safety glasses with side shields
 - 3. Hard hat
- B. Site specific PPE
 - 1. Hearing protection
 - 2. Respirators with proper filters/cartridges
- C. Flame retardant clothing/coveralls
- D. Emergency escape packs, where necessary
- E. Supplied-air respirators (if OR-OSHA policy regarding their use is changed and then only for SCO/HCOs who have received approved training within time frames as per the OR-OSHA Respiratory Protection Program)
- F. Oxygen and combustible meters

II.SAMPLING EQUIPMENT

- A. Hydrogen sulfide dataloggers/dosimeters
- B. Noise dosimeters
- C. Benzene equipment/media
- D. Sulfuric acid/hydrogen fluoride equipment/media
- E. Asbestos media
- F. Other air contaminants
- G. Charging facilities (area and equipment)
- H. TSD sites - specific requirements

III.TECHNICAL EQUIPMENT

- A. Cameras and video cameras
 - 1. Company policy regarding use
 - 2. Each SCO/HCO inspection team equipped with a camera
 - 3. Careful log of each frame (who, when, where, what)

B. FILM

1. Each roll should be identified with SCO/HCO, date, and time prior to developing
2. Each picture identified with HCO/SCO, date, and time
3. Film must be developed as soon as possible, and identified (who, what, where, when)
4. Film log must be maintained with roll number, SCO/HCO, date in for developing, date returned
5. Photos should be mounted on worksheets and identified sequentially for each team member
6. Negatives must be identified and secured (preferably stored separately from developed photographs)

C. Videotapes

1. Identified with SCO/HCO, date, and subject
2. Original tapes must be maintained
3. Videotape log maintained with SCO/HCO, camera number (serial number), and date

D. Audiotapes

1. Primarily for interviews and/or field notes
2. Company policy
3. Permit requirements
4. Original tapes must be retained in file
5. Transcription (as needed)
6. Tapes must be identified with date, team member, and subject matter
7. Tapes must be logged

INSPECTION KIT

I. Office Supplies

- A. Folders (file folders and expandable)
- B. Paper clips
- C. Hole punch
- D. Stapler and staples
- E. Staple puller
- F. White out/correction tape
- G. Colored pencils/markers
- H. Scissors
- I. Post-its
- J. Tape
- K. Labels
- L. Pens/pencils
- M. Calculator
- N. Ruler/graph paper
- O. Filing Boxes
- P. Envelopes

II. Inspection Supplies

- A. OR-OSHA forms
- B. Film, audio and video tapes
- C. Batteries and battery packs for camcorders
- D. Film processing envelopes
- E. Sampling media
 - 1. smoke tubes
 - 2. scintillation vials
 - 3. filters/charcoal tubes
- F. OSHA 31's & travel vouchers

III. Command Center Equipment (to be at or readily available to the command center)

- A. Computers (two or more)
 - 1. database management program
 - 2. word processor
 - 3. spreadsheet
 - 4. floppy disks
- B. Printer with paper and spare ribbon
- C. Disk storage boxes
- D. Fax with extra paper
- E. Cellular phone and pagers if needed
- F. Chargers for all equipment
- G. Answering machine
- H. Telephone directory (OR-OSHA and OSHA contacts)

IV. Library/Reference Material

- A. API 510, 750, and others
- B. PUB 8-1.5, CPL2 PETROSEP (March 9, 1992) (available through the Central Office)
- C. 1910.119 Process Safety Management
- D. OTI-PSM (Courses 330/340) manuals
- E. 2 sets General Industry and Construction Standards
- F. SAVES manual
- G. Field Inspection Reference Manual
- H. Other references as needed; e.g., NFPA, ANSI, ASNT

Appendix G

Recording PSM-Related Inspection in IMIS

Information about PSM-related inspection activity, as described at H. of this instruction, shall be recorded in IMIS following current instructions in the IMIS manual. These guidelines shall apply:

1. PQV Inspections. The identifier code "PSMPQV" shall be used for these inspections.
 - a. PQV inspections, as described at (9), (10), and (11) of this instruction, shall be identified by recording "PSMPQV" in item 25.d of the OSHA-1 Form.
 - b. Any inspections of onsite contractors shall also be identified by recording "PSMPQV" in item 25.d of the OR-OSHA-1 Form.
 - c. Linkage of all of the employers inspected on-site shall be performed in accordance with the instructions for entering Multi-Employer Inspections currently specified in Chapter V (on the OSHA 1), item E.(5.), of the IMIS Forms Manual.
 - d. PQV inspections may be programmed or unprogrammed; all PQV inspections shall be identified as comprehensive.
2. Unprogrammed PSM-related Inspections. All unprogrammed inspection activity relating to the PSM standard -- as described at (7)C. of this instruction -- shall be coded as follows in Item 42, Optional Information of the OR-OSHA-1 form:

<u>TYPE</u>	<u>ID</u>	<u>VALUE</u>
N	06	PSMP

This shall apply to all unprogrammed inspections in which compliance with the PSM standard is investigated; i.e., inspections in which the establishment:

- a. Is not in one of the SIC codes listed in Appendix C of this instruction; or
 - b. Is not an establishment selected for a PQV inspection, although it is in one of the SIC codes listed in Appendix C of this instruction.
3. Other Programmed Inspections: Screening for PSM Coverage. In all programmed safety and health inspections in general industry, a determination shall be made as to whether the establishment is covered by the PSM standard. The establishments shall be coded as follows in Item 42, Optional Information of the OR-OSHA-1 form:

- a. Establishments determined to be covered by the PSM standard:

<u>TYPE</u>	<u>ID</u>	<u>VALUE</u>
N	06	PSMY

- b. Establishments determined to be NOT covered by the PSM standard:

<u>TYPE</u>	<u>ID</u>	<u>VALUE</u>
N	06	PSMN