DOSH DIRECTIVE
Division of Occupational Safety and Health
Department of Labor and Industries
Keeping Washington safe and working

24.50 Process Safety Management Inspections

Date: December 18, 2015

I. Purpose

This DOSH Directive implements the Washington State inspection program for worksites covered by the process safety management standard. It is based in part on OSHA's instruction (CPL 02-02-045) Process Safety Management of Highly Hazardous Chemicals – Compliance Guidelines and Enforcement Procedures. The purpose is to reduce or eliminate workplace hazards associated with the catastrophic release of highly hazardous chemicals.

II. Scope and Application

This Directive applies to all DOSH operations statewide. It replaces all previous instructions on this issue, whether formal or informal. It is one of two inspection directives for worksites covered by the process safety management standard.

DOSH Directive 24.40 implements the PSM-covered facility Chemical NEP established by federal OSHA. This Directive differs from DOSH Directive 24.40 which excludes refineries from the scope, has a specific list of questions that must be asked during inspection, and is only used for programmed inspections.

This Directive cancels two DOSH Directives (DD):

- 24.10, Process Safety Management, issued 9/2/2002, **and**
- 2.62, PSM Inspection Targeting & Tracking, issued 1/31/2001.

III. References

- **OSHA References:**
  - OSHA CPL 02-02-045 (PSM of Highly Hazardous Chemicals- Compliance Guidelines and Enforcement Procedures)
  - OSHA CPL 02-00-094 (OSHA Response to Significant Events of Potentially Catastrophic Consequences)
  - OSHA CPL 03-00-014 (PSM Covered Chemical Facilities National Emphasis Program)

- **DOSH References:**
  - Chapter 296-67 WAC, Process Safety Management of Highly Hazardous Chemicals
  - DOSH Compliance Manual
  - DOSH Directive 24.40, Chemical Facility Process Safety Management NEP

IV. Acronyms

BPVC	Boiler and Pressure Vessel Code
CSHO	Compliance Safety and Health Officer
DOSH	Division of Occupational Safety and Health
HHC	Highly Hazardous Chemical
IMIS	Integrated Management Information System
LOPA	Layer of Protection Analysis
MI	Mechanical Integrity
MOC	Management of Change
NAICS	North American Industry Classification System
NDT	Non-destructive testing
NEP	National Emphasis Program
NIOSH	National Institute for Occupational Safety and Health
PHA	Process Hazard Analysis
P&ID	Piping and Instrument Diagram
PMI	Positive Materials Identification
PRV	Pressure Relief Valve
PSV	Pressure Safety Valve
PPE	Personal Protective Equipment
PSI	Process Safety Information
PSM	Process Safety Management
PSSR	Pre-Startup Safety Review
RAGAGEP	Recognized and Generally Accepted Good Engineering Practices
RIK	Replacement in Kind
RMP	Risk Management Program
TML	Thickness Measurement Location
UT	Ultrasonic Testing
WAC	Washington Administrative Code
WIN	WISHA Information Network

V. 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.

Catastrophic accidents in the chemical industry have drawn attention to the safety of processes involving highly hazardous chemicals. OSHA has 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.

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.

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.

VI. Enforcement Policies

A. Programmed Inspection Site Selection.

1. Scheduling Sources.

   DOSH will use sources such as, but not limited to, the following for inspection scheduling:

   a. U.S. Environmental Protection Agency's (EPA) Chemical Accident Prevention Provisions, Program 3 Risk Management Plans (RMP)

   b. Explosives manufacturing NAICS codes

   c. DOSH's WIN, and OSHA's IMIS, databases

   d. DOSH Regional staff knowledge of local facilities

   e. rtknet.org (The Right-To-Know network)

   f. Investigative reports (e.g. news sources, U.S. Chemical Safety Board)

   The DOSH WIN (and OSHA IMIS) databases will be used to identify facilities that have previously been cited for violations of the PSM standard. These facilities will be added to the inspection scheduling list.

   A list of facilities with NAICS codes identical to those having previously been cited under the PSM standard will be created. These facilities will not be automatically added to the targeting list, but will be taken into consideration by DOSH staff when adding facilities based on knowledge. The Technical Services PSM Specialist is responsible for making sure that the scheduling source data is collected and used to develop the list.

2. Inspection Scheduling List.

   a. The Technical Services PSM Specialist will create an inspection scheduling list and update it annually.

   b. Deletions from the list will be made according to the following criteria:

      - Any facilities that are known to be out of business, documenting the basis for such determinations.
      - Any facility that is an approved participant in DOSH's *Voluntary Protection Program* (VPP) or DOSH Consultation's *Safety Through Achieving Recognition Together* (START).
      - Any facility that has already received a PQV inspection in the last two years.
      - Any facilities that have received a comprehensive PSM inspection within the last two years.
      - Deletions may be made for facilities having received a consultation. Refer to the DOSH Compliance Manual for further guidance.

3. Inspection Scheduling.

   Determinations about which businesses will be chosen from the scheduling lists will be based upon such factors as availability of DOSH resources, compliance and consultation history, nature and quantity of chemicals involved, age of facility, and incident history. Rationale for priority will be documented.

   Assignments will be made by regional supervisors with input from Central Office staff and regional process safety specialists.

   Inspections of explosives manufacturers must only be assigned after discussion with the explosives program technical expert.

B. Site Specific Targeting (SST) and Unprogrammed Inspections.

1. SST Inspections.

   Some establishments may also be selected for inspection under the current Site-Specific Targeting (SST) Plan. CSHOs must use this Directive for the comprehensive inspection of the selected PSM-covered process(es) at the facility. CSHOs may, after consulting with their supervisor, expand the PSM portion of the inspection if they determine that PSM deficiencies may exist outside of the selected process or unit. Depending upon the complexity of the PSM-covered process, supervisors may assign another CSHO to perform the portion of the facility inspection that does not involve the PSM-covered process, in order to meet the SST plan requirement for inspection of the establishment.

2. Unprogrammed Inspections.

The following guidelines must be used for all unprogrammed inspection activities related to PSM-covered processes nationwide:

a. Complaint or referral. If a formal complaint or referral is received relating to a PSM-covered process and it:

- ***Involves an application of the PSM standard*** - the supervisor must evaluate the complaint or referral item(s) in the usual manner (DOSH Compliance Manual) and conduct an inspection using this Directive.

- ***Does not involve an application of the PSM standard (for example, there is a complaint about PPE requirements in a PSM covered process)***- the inspection or inquiry will normally be limited to the complaint and referral item(s)/subject(s) only. However, if the facility has not already been inspected, a concurrent inspection using this directive may be conducted at the supervisor's discretion.

b. Accidents and Catastrophes. Responses to accidents and catastrophes in facilities that contain PSM-covered processes must follow the guidelines contained in the DOSH Compliance Manual and, where appropriate, in OSHA Instruction CPL 02-00-094, *OSHA Response to Significant Events of Potentially Catastrophic Consequences* ,in addition to the guidelines in the PQV protocol.

When an accident or catastrophe occurs in a facility that contains a PSM-covered process, and it:

- ***Involves an application of the PSM standard*** - an inspection will be conducted as per the DOSH Compliance Manual, in addition to the guidelines in this directive.

- ***Does not involve an application of the PSM standard*** - the inspection will normally be limited to the accident investigation item(s)/subject(s) alone. However**,** if the facility has not already been inspected, a concurrent inspection using this directive may be conducted at the supervisor's discretion.

C. Inspection Resources.

Appropriate levels of staff experience, training, and preparation are essential for compliance activities relating to the PSM standard. Inspections using this directive may be conducted by either a single DOSH employee or a team. At least one member of the team or the single DOSH employee must be qualified to Level 1 as described below.

Note: Due to a significant change in course content, completion of Course 330 prior to Fiscal Year 1991 does not meet this requirement for Level 1 training.

1. Level 1: Inspections of Ammonia Refrigeration Processes Only.

   DOSH personnel may be assigned as Level 1 team members under this notice for inspections of ammonia refrigeration facilities, if:

   - They have completed OSHA Training Institute's (OTI) Course 3300, *Safety and Health in the Chemical Processing Industries*, Course 3400, *Hazard Analysis in the Chemical Processing Industries*, **and**,

   - They have completed advanced training such as OTI Course 3410, *Advanced Process Safety Management*, OTI Course 3430, *Advanced PSM in the Chemical Industries*, or a specialized course on ammonia refrigeration, **and,**

   - They have prior experience including:

     - Accident investigations in chemical, petrochemical, or refinery plants involving fires, explosions, and/or toxic chemical releases, **or**,

     - Previous chemical inspections involving process safety management evaluations, **or**

     - Previous chemical industry employment, **or**

     - Participation in a PSM inspection of an ammonia refrigeration facility.

2. Level 1: Inspections of All Processes Except Ammonia Refrigeration.

   DOSH personnel may be assigned as Level 1 team members under this notice, if they meet the criteria for any of the following options.

- Option 1:
  - They have completed OSHA Training Institute's (OTI) Course 3300, *Safety and Health in the Chemical Processing Industries*, Course 3400, *Hazard Analysis in the Chemical Processing Industries* and advanced training including either OTI Course 3410, *Advanced Process Safety Management*, or Course 3430, *Advanced PSM in the Chemical Industries*, **and,**

  - They have previous (DOSH, other government agency, or industry) chemical industry safety experience including: accident investigations in chemical, petrochemical or refinery plants involving fires, explosions, and/or toxic chemical releases, ***or,***

  - They have previous (DOSH, other government agency, or industry) chemical inspection experience involving process safety management evaluations, or previous chemical industry employment involving process engineering, operations, safety, or maintenance.

- Option 2:
  - They have completed OSHA Training Institute's (OTI) Course 3430, *Advanced PSM in the Chemical Industries* or Course 3410, *Advanced Process Safety Management*, **and,**

  - They have 3 years experience working in a PSM-covered manufacturing facility (chemical, petrochemical, refining) in a process engineering, operations, safety, or maintenance position.

- Option 3:
  - They have completed OSHA Training Institute's (OTI) Course 3430, *Advanced PSM in the Chemical Industries* or Course 3410, *Advanced Process Safety Management*, **and**,

  - They have 7 years experience working for federal OSHA or an OSHA state plan program, **and**,

  - They have participated in more than 20 PSM and/or chemical plant inspections where they were the team leader equivalent in at least two of the inspections.

3. Level 2: Inspections of All Processes.

   DOSH personnel may be assigned as inspection team members under this notice, if they meet the criteria for any of the following options:

- Option 1:
  - They have completed OTI course 3300, *Safety and Health in the Chemical Processing Industries* (including offerings of this course prior to fiscal year 1991) and OTI course 3400 *Hazard Analysis in the Chemical Processing Industries*, **and**,
  - They have 2 years of OSHA inspection experience or the equivalent, such as OSHA state plan program experience, EPA RMP experience, or U.S. Chemical Safety Board experience.
- Option 2:
  - They have 3 years of experience working in a PSM-covered manufacturing facility (chemical, petrochemical, refining) in a process engineering, operations, safety, or maintenance position.
- Option 3:
  - They have 7 years of federal OSHA or OSHA state plan program experience, **and**,
  - They have participated in more than 20 PSM and/or chemical plant inspections where they were the team leader equivalent in at least two of these inspections.

4. Level 3: Inspections of All Processes.

DOSH personnel who do not have the training and experience to qualify as Level 1 or 2 may be assigned to an inspection team under this notice, in the following circumstances:

- Level 3 team members must be under the direction of a Level 1 or 2 team member.
- Level 3 team members experienced in evaluating other programmatic standards such as hazard communication, lockout/tagout, confined space entry, and respiratory protection programs may evaluate programmatic sections of the PSM standard.
- Level 3 team members may evaluate compliance with the following elements of the PSM standard:
  - Employee participation
  - Training
  - Contractors
  - Hot work permits
  - Incident investigation
  - Emergency planning and response

D. Inspection Process.

The primary enforcement model for the PSM standard is the PQV Inspection. Comprehensive inspections under the PSM standard shall evaluate the program used by the employer (and the process-related contract employers) to manage the hazards associated with processes using highly hazardous chemicals. The nature of these inspections involves a three-fold concept, which for reference is termed **Program-Quality-Verification** (PQV).

Essentially, a "PQV" inspection entails making sure that there is an appropriate PSM **P**rogram in place and that **Q**uality practices and procedures for the prevention of a catastrophic chemical release are implemented. This is **V**erified through document reviews, onsite observations, and interviews. Additional details on the inspection process are located in Appendix A.

E. Inspection Procedures.

1. Supplemented DOSH Compliance Manual Procedures.

   The procedures given in the DOSH Compliance Manual must be followed except as modified in the following sections.

2. Opening Conference.

   Where possible, the facility safety and health director, process safety manager, or other person capable of explaining the company's process safety management program must be asked to attend the opening conference.

   The opening conference must also include the following:

   a. Verify PSM Applicability. CSHOs must confirm that the facility has a PSM-covered process.

      - CSHOs must request a list of the chemicals on site and their respective maximum intended inventories. CSHOs must review the list of chemicals and quantities, and determine if there are HHCs listed in Chapter 296-67 WAC, Appendix A, or flammable liquids or gases at or above the specified threshold quantity. CSHOs may ask questions, conduct interviews, or conduct a walkaround to confirm the information on the list of chemicals and maximum intended inventories.

        If CSHOs determine that there are no HHCs, flammable liquids, or flammable gases present in sufficient quantities, and the facility is not manufacturing explosives or pyrotechnics as defined in Chapter 296-52 WAC, then, after updating their supervisor, they must document the finding and end the inspection (unless the business is also being inspected due to its presence on a SST list).

- CSHOs must confirm that the facility is not a retail facility, oil or gas well drilling or servicing operation, or normally unoccupied remote facility (WAC 296-67-001(2)(b)). If the facility is one of these types of establishments, CSHOs should document their findings and end the inspection (unless the business is also being inspected due to its presence on a SST list).

- CSHOs must determine if other exemptions apply. According to WAC 296-67-001(2)(a)(ii), a process could be exempt if the employer can demonstrate that covered chemical(s) are:
  - Hydrocarbon fuels used solely for workplace consumption as a fuel (e.g., propane used for comfort heating, gasoline for vehicle refueling), if such fuels are not a part of a process containing another highly hazardous chemical covered by the standard, **or**
  - Flammable liquids stored in atmospheric tanks or transferred, which are kept below their normal boiling point without the benefit of chilling or refrigeration.

  If management believes that the process is exempt, CSHOs must ask the employer to provide documentation or other information that demonstrates why the process is exempt.

- CSHOs may ask questions, conduct interviews, or conduct a walkaround to confirm that the exemption applies. If, at this point, they determine that the facility is either not covered, or covered but exempted, then, after updating their supervisor, they must document the finding and end the inspection (unless the business is also being inspected due to its presence on a SST list).

b. During the opening conference, CSHOs must familiarize themselves with the establishment's emergency response procedures and emergency alarms.

c. CSHOs must also request that the management representative(s) provide them with an overview of the processes/units at the facility, including block flow and/or process flow diagrams indicating chemicals and processes involved.

d. To understand the basics of the employer's processes and the possible catastrophic scenarios that could occur, the team should ask the management representative to explain worst case catastrophic release scenarios that might occur and what controls are in place to prevent them from happening.

3. PSM Overview.

Prior to beginning the initial walkaround inspections, the team must request an explanation of the company's PSM programs including, but not limited to:

- A briefing on the PSM program components and how the facility implements them;
- Identification by name and position of personnel responsible for implementing the standards' various elements;
- A description of company records used to verify compliance with standards; and
- A review of the written summary description of the PSM program.

4. Personal Protective Equipment (PPE) and Camera/Video Use.

In addition to normal inspection protective equipment, CSHOs conducting these inspections must be provided with flame-retardant coveralls for protection from flash fires and with NIOSH-approved emergency escape respirators for use during any emergency conditions.

a. CSHOs must 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.

Clothing made of hazardous synthetic fabrics may melt causing severe burns, and should not be worn underneath flame-retardant coveralls. All garments worn under flame-retardant coveralls must be made of 100% cotton or other non-synthetic fibers.

b. Prior to the initial walkaround inspections, CSHOs must review the employer's procedures for PPE selection and allowable electronic equipment in the Selected Unit (s) and/or areas of the facility CSHOs will be inspecting. CSHOs shall ensure that these procedures and the associated PPE selection have been prepared in accordance with the PSM standard as well as WAC 296-800-160, Personal Protective Equipment.

The facility-required PPE and flame-retardant coveralls (where flash fires are possible) are the baseline PPE requirements for CSHOs conducting walkaround inspections.

- If the facility requires a respirator, or if, in a CSHO's judgment, a respirator should be worn, then each CSHO must receive proper training and qualification prior to using their respirator.

  CSHOs must carry emergency escape respirators, when necessary, during the walkaround portion(s) of the inspection. CSHOs conducting these inspections must have received proper training in the use of emergency escape respirators.

- CSHOs must be provided with appropriate alert monitors approved for the environment where they will be used (e.g., HCN, Cl_2, H_2S) where such devices are necessary.

- For electrically classified areas, CSHOs must ensure that cameras (still or video) are intrinsically safe.

  Note: CSHOs may use cameras equipped with a telephoto lens from outside classified areas and/or still cameras without batteries or a flash.

  If the employer allows the use of non-intrinsically safe cameras in hazardous (classified) locations, CSHOs may use this type of equipment when: 1) the employer issues a hot work permit for the use of the camera; and 2) continuous combustible gas metering, which has been calibrated prior to use, is provided in the areas where the camera will be used.

- CSHOs must ensure that all electronic devices such as cell phones, PDAs, etc., are turned off.

5. Initial Walkaround.

   After the opening conference, the inspection may begin with a brief initial walkaround inspection of those portions of the facility within the scope of the PSM standard. During the initial walkaround CSHOs are advised to:

   - Look for differences between what was presented in the PSM overview discussion and actual conditions;

   - Gather information to aid in the selection of the process unit(s) to be inspected;

   - Obtain a basic overview of the facility's operations;

   - Observe potential hazards including, but not limited to, pipe work at risk of impact, corroded or leaking equipment, unit or control room siting and trailer location, relief devices and atmospheric vents that discharge to atmosphere, and ongoing construction and maintenance activities;

   - Solicit input from employees and their representatives and contract employees concerning potential PSM program deficiencies.

   Compliance Guidance: Additional walkaround activity will be necessary after the Selected Unit(s) are identified.

6. Selection of Unit.

   The Team Leader must select a PSM-covered process or processes to evaluate for compliance with the standard. For large continuous processes, the Team Leader may select a portion of the covered process, for example, a unit operation within the covered process. The selected process or portion thereof must be referred to as the Selected Unit.

   CSHOs may select more than one unit if they feel it is necessary, to get a representative sample of the facility's covered processes based on the size and complexity of the facility. The selection should be based on the factors listed below, and must be documented in the case file:

   a. Nature (e.g., risk of releasing flammables, high-toxicity substances present, high operating pressures and temperatures) and quantity of chemicals involved

   b. Incident reports, near-miss investigation reports, emergency shutdown records, and other history

   c. Lead operator's input

   d. Age of the process unit

   e. Factors observed during the walkaround

   f. Worker representative input

   g. Number of workers present

   h. Current hot work, equipment replacement, inspection, test and repair records, or other maintenance activities

   i. Compliance audit records, including open and pending items

   j. List of contractors.

   Compliance Guidance: It is not intended that the unit selection be a resource-intensive activity. The criteria listed above are intended to be used as a guide. The Team Leader should attempt to identify the most hazardous process using these criteria; however, he/she can use discretion in choosing the Selected Unit.

7. Inspection of Contractors.

   If the facility is using contractors in PSM covered operations, contractors working in the Selected Unit must be inspected (during programmed inspections).

8. Compliance Guidelines.

When conducting PSM compliance evaluations of the Selected Unit:

a. Inspection Protocol. CSHOs will select one or more units and use the additional information in Appendix A for assessing and verifying compliance with PSM standard.

b. Expanded Inspection. If, during the course of the evaluation, CSHOs determine that PSM deficiencies may exist outside of the selected unit, he/she must consult his or her direct supervisor and may expand the inspection to other units or areas. CSHOs must document the basis for this determination.

c. Hazardous Conditions or Violations Not Addressed by PSM Standard. CSHOs may recommend citations for any hazardous conditions or violations of DOSH standards, including "Safe Workplace" (WAC 296-800-110), found during the inspection.

9. Citations.

Citations for violations must be issued in accordance with the DOSH Compliance Manual. The following additional directions must be used for citations of PSM violations:

a. The requirements of the PSM standard are intended to eliminate or mitigate catastrophic releases of HHC. 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 HHC.

b. Any violation of the PSM standard is a condition that could kill or seriously harm employees.

c. Violations of the PSM standard must **not** normally be classified as "general".

F. Outreach.

The DOSH Education and Outreach Program will develop information about PSM, hazards, and prevention resources and distribute the information to affected Washington State employers, business, and labor associations.

G. WIN Coding Instructions.

The instructions that follow are for inspections performed under this directive.

1. All enforcement activities conducted under this directive must be coded with "Process Safety Management" located in the Special Tracking Information field of WIN.

2. All inspections of contractors initiated as a result of a Programmed inspection of the host employer will be identified as Program Related.

3. All consultation activities conducted in response to this directive must also include the "Process Safety Management" code.

H. Periodic Evaluation of this Directive.

This Directive will be reviewed and updated as needed.

Approved: _____
Anne F. Soiza, Assistant Director
Division of Occupational Safety and Health
Department of Labor and Industries

[Appendices A through D are located below]

APPENDIX A

PSM Audit Guidelines

This appendix contains audit guidelines intended to assist the CSHO in investigating an employer's compliance with the PSM standard.

Verification of the employer's compliance with the PSM standard is done through a combination of document reviews, observation of onsite conditions, and interviews. All three techniques are critical and they are closely interwoven as described below.

The purpose of document reviews is two-fold. First, certain written documents are required to be kept and a review of this sort allows the CSHO to simply verify that they are present and complete. Document reviews also provide specific details about operations that the CSHO can then follow-up on through interviews and observations of onsite conditions to make sure that what is on paper is put into practice. Onsite observations and interviews have a two-fold purpose as well. Not only do they allow the CSHO a means of verification as just described, but in and of themselves they create an opportunity for identifying additional potential hazards. In order to follow-up on those potential hazards the CSHO may then need to look back at additional documents, perform more interviews, and further observe site conditions.

Compliance with each section of the PSM standard must be evaluated during programmed inspections. During the investigation of complaints, referrals, accidents, and catastrophes, CSHOs are not required to evaluate compliance with each section of the standard and must first focus on the specific issue that triggered the inspection to make sure that it is thoroughly addressed. If findings during the inspection warrant it and time allows, the inspection may be expanded to cover additional elements of the standard.

CSHOs are not restricted to asking particular questions. The investigation of a hazard may necessitate the use of questions which might not be present on one particular list. Questions may be selected from any source, such as those issued for any previous or current PSM NEP.

As the PSM standard is a performance one, CSHOs must use discretion when determining that a violation exists based on answers to specific questions. The employer may have an acceptable alternative in place to what might be expected and this must be evaluated. Especially if an alternative method is used, it is incumbent upon the employer to demonstrate that its method is still compliant with the standard.

CSHOs are not limited to using one specific approach. They may proceed in a way that will best facilitate their inspection based on the circumstances, as long as compliance with each section of the standard is evaluated (during programmed inspections, not necessarily complaints, accidents/catastrophes, and referrals unless the CSHO feels expansion of the inspection is warranted). One approach could be to choose a particular set of equipment and operations within the selected unit to check for compliance. If a specific concern arises via document reviews, onsite observations, or interviews then another option could be checking compliance with applicable sections of the PSM standard related to that specific concern. These and other approaches, as well as any combination of them, can be utilized.

Because of the interrelationship of the PSM elements, CSHOs may find that under some circumstances more than one provision of the standard may be applicable. 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, CSHOs must review a sample of the related elements to see if the appropriate changes and follow-up 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. CSHOs would check a representative number of these elements to confirm that the required follow-up activities have been implemented for the new valve."

Given the catastrophic nature of the hazards associated with PSM, the PSM elements work together to help ensure that if the employer is deficient in one PSM element, the other elements, if complied with, prevent or mitigate a catastrophic incident. Consequently, the PSM standard uses a 'one hazard-several abatements' approach to ensure that PSM-related hazards are adequately controlled.

Abatement requirements include:

- Management system/program requirements – e.g., the employer must develop mechanical integrity program procedures that include piping inspection procedures, 296-67-037(2), and

- Specific employer action/task abatement requirements -e.g., the employer must inspect the piping, 296-67-037(4).

Therefore, to assure that all the employer's process safety management systems/elements are being fully implemented, CSHOs should consider citing all applicable violations. Grouping these violations may be appropriate; see the DOSH Compliance Manual.

Document Requests

CSHOs must request access to the documents listed below.

Compliance Guidance: The list below is not intended to limit the type and number of documents to be requested. The DOSH inspection team may request additional documents as necessary-even those that the employer has compiled which are not required by the standard. Examples of such documents include a list of all PSM-covered process/units in the complex and a summary description of the facility's PSM program.

Some requests require the employer to provide a list of information. The intent of first requesting a list versus complete documentation is to limit the amount of documents that the employer may have to produce.

Documents specifically required by a DOSH rule are identified (*). Documents identified (##) are requested after the Selected Unit is determined. In some cases, documentation may have been produced by a consultant or contractor.

Row	Specifically Required By A DOSH Rule	Requested After the Selected Unit is Determined
1.	OSHA 300 logs for the previous three years for the employer and the process-related contractors.*	
2.	All contract employee injury and illness logs as required by 296-67-029(2)(f).*	
3.	A list of all units and the maximum intended inventories* of all chemicals (in pounds) in each of the listed units. *Compliance Guidance: 296-67-013(2)(a)(iii) requires the employer to have process safety information (PSI) for the maximum intended inventories of chemicals that are part of their PSM-covered processes.*	

Row	Specifically Required By A DOSH Rule	Requested After the Selected Unit is Determined
4.	Unit process flow diagrams*.	
5.	Piping and instrumentation diagrams (P&IDs) including legends*##.	Piping and instrumentation diagrams (P&IDs) including legends*##.
6.	Unit Plot plans*.	
7.	Unit Electrical classification diagrams*##.	Unit Electrical classification diagrams*##.
8.	Process narrative descriptions*.	
9.	Descriptions of safety systems (e.g. interlocks, detection or suppression systems)*##.	Descriptions of safety systems (e.g. interlocks, detection or suppression systems)*##.
10.	Design codes and standards employed for process*##/equipment*## in the Selected Unit (s).	Design codes and standards employed for process*##/equipment*## in the Selected Unit (s).
11.		A list of all workers (i.e., hourly and supervisory) presently involved in operating the Selected Units (s) including names, job titles, work shifts, start date in the unit, and the name of the person(s) to whom they report (their supervisor)##.
12.	The initial process hazard analysis*(PHA) and the most recent update/"redo" or revalidation* for the Selected	Documentation of findings and recommendations*. ##

Row	Specifically Required By A DOSH Rule	Requested After the Selected Unit is Determined
	Unit (s); this includes: i. PHA reports*, ii. PHA worksheets*, iii. actions to address findings and recommendations promptly*, iv. written schedules for actions to be completed*, and v. documentation of findings and recommendations*. ## *Compliance Guidance: Any PHA performed after May 25, 1987 that meets the requirements of 296-67-017 may be claimed by the employer as the initial PHA for compliance purposes, see 296-67-017(1)(e).*	
13.	Safe upper and lower operating limits for the Selected Unit (s).*##	Safe upper and lower operating limits for the Selected Unit (s).*##
14.	A list by title and unit of each PSM incident report*;	All PSM incident reports for the selected unit*##.

Additional PSM Program Element Evaluation Guidance

Direction contained in this section is not a requirement, but an optional guideline. While not obligated, CSHOs may find it helpful to use the suggestions in this section as part of their evaluation of the employer's compliance with the PSM standard.

Employee Participation

WAC 296-67-009(3)

During interviews, ask about unreasonable delays in access to information and whether time is given during the working hours to access information required by the PSM standard.

PSI

WAC 296-67-013(3)(c)

Documentation may be through methods such as: documenting successful prior operation procedures; documenting that the equipment is consistent with the appropriate editions of codes and standards; or performing an engineering analysis to determine that the equipment is appropriate for its intended use.

WAC 296-67-013(3)(b)

During interviews, ask about the technical bases for design and selection of equipment, the materials of construction, electrical classifications, relief devices sizing versus maximum anticipated pressures, installation procedures to assure equipment meets design specifications, etc.

PHA

WAC 296-67-017(3)

Examples of hazards of the process, previous incidents and consequences of failure of engineering and administrative controls include potential injury, maximum release of hazardous materials, property damage, etc.

Examples of engineering and administrative controls (and their interrelationships) may include appropriate application of detection methodologies to provide early warning of releases; inventory reduction; substitution of less hazardous materials; protective systems such as deluges, monitors, foams; increased separation distances; modification of the process temperature or pressure; redundancy in instrumentation; etc.

For facility siting, review calculations, charts, and other documents that verify facility siting has been considered. For example, safe distances for locating control rooms may be based on studies of the individual characteristics of equipment involved such as: types of construction of the room, types and quantities of materials, types of reactions and processes,

operating pressures and temperatures, presence of ignition sources, fire protection facilities, capabilities to respond to explosions, drainage facilities, location of fresh air intakes, etc.

Regarding human factors, it may include a review of operator/process and operator/equipment interface, the number of tasks operators must perform and the frequency, the evaluation of extended or unusual work schedules, the clarity and simplicity of control displays, automatic instrumentation versus manual procedures, operator feedback, clarity of signs and codes, etc.

WAC 296-67-017(5)

In terms of establishing a system that promptly addresses the team's findings and recommendations, has the system been able to:

* Assure that the recommendations are resolved and documented in a timely manner?
* Document actions to be taken?
* Complete actions as soon as possible?
* Develop a written schedule of when actions are to be completed?
* Communicate the actions to operating, maintenance and other employees whose work assignments are in the process and who may be affected by the recommendations or actions?

WAC 296-67-017(1)

For determining whether obvious hazards have been identified, evaluated, and controlled, CSHOs can look at issues such as whether hydrocarbon or toxic gas monitors and alarms are present; electrical classifications are consistent with flammability hazards; destruct systems such as flares are in place and operating; control room siting is adequate or provisions have been made for blast resistant construction, pressurization, alarms, etc.; pressure relief valves and rupture disks are properly designed and discharge to a safe area; pipework is protected from impact; etc.

<u>Operating Procedures</u>

WAC 296-67-021(1)

During interviews, to determine whether operating procedures provide clear instructions for safely conducting activities, specifically ask for conditions requiring emergency shutdown, the operating limits of a particular process or item of equipment, what might occur if a deviation from those limits should take place, steps to avoid the deviation, and precautions necessary to prevent exposure to hazardous chemicals.

<u>Mechanical Integrity</u>

WAC 296-67-037(3)

Review certification documents for employees doing non-destructive tests, welding on pressure vessels, etc., where these certifications are required.

WAC 296-67-037(2)

To help determine whether procedures to maintain the on-going integrity of process equipment have been implemented, during interview ask about the possibility of safety critical equipment being inadvertently rendered inoperative. For example, a relief device might be isolated by closing an upstream valve.

WAC 296-67-037(3)

Determine if certification, specialized training, or unique qualifications are required.

MOC

WAC 296-67-045(1)

Review procedures that address responsibilities, steps for assessing risks and approving changes, requirements for reviewing designs for temporary and permanent changes, steps needed to verify that modifications have been made as designed, variance procedures, time limit authorizations for temporary changes, and steps required to return the process to status quo after temporary changes.

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 citations refer to Chapter 296-67 WAC.***

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.

-001(2) Application

-001(2) Registration

Do covered establishments have to register with DOSH?

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

-001(2) Explosives--fireworks manufacture

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

The PSM standard amended the scope of Chapter 296-52 WAC, Safety Standards for the Possession and Handling of Explosives, by revising section 296-52-60115, which requires that the manufacturer of explosives and pyrotechnics comply with chapter 296-67 WAC. As defined by WAC 296-52-60130, pyrotechnics are commonly referred to as fireworks. Employers who manufacture explosives and fireworks must comply with both Chapter 296-52 WAC and Chapter 296-67 WAC (as well as any other applicable DOSH standards).

The applicability of Chapter 296-52 WAC to employers who manufacture fireworks is delineated in DOSH Directive 19.25, Explosives Inspection Activities and Procedures. In accordance with that directive, a fireworks plant employer can be cited for violation of Chapter 296-52 WAC with reference to certain National Fire Protection Association (NFPA) standards such as NFPA 1124, Code for the Manufacture, Transportation and Storage of Fireworks.

What is the role of the Bureau of Alcohol, Tobacco and Firearms (BATF) vis-a-vis the PSM standard and fireworks manufacture?

RCW 70.74 is the Washington State Explosives Act, RCW 70.77 is the State Fireworks Law, and Chapter 296-52 WAC is the Safety Standard for the Possession and Handling of Explosives. BATF requirements and restrictions are referenced and incorporated throughout. Examples of these include minimum storage distances for explosives and limits on amounts of explosive materials used to assemble fireworks in processing buildings. RCW 70.74 and Chapter 296-52 WAC are enforced by DOSH Explosives Inspectors. The Washington State Fire Marshal's office has responsibility for RCW 70.77.

The PSM standard applies to **any** amount of explosives or fireworks being manufactured.

-001(2) Laboratories

Does the PSM standard apply to laboratory and research operations?

A laboratory or research operation involving at least the threshold quantity of one or more highly hazardous chemicals is subject to the PSM standard.

-001(2) Flammable liquids

Are processes involving flammable liquids (e.g., ethyl alcohol) covered by the standard?

Processes involving flammable liquids (e.g., in a distillation process) in quantities at or above 10,000 lbs. are covered. Quantities of flammable liquids in storage are considered a part of the process if the storage tanks are interconnected with the process, or if they are sufficiently near the process that an explosion, fire, or release could reasonably involve the storage area combined with the process in quantities sufficient to meet the threshold amount of 10,000 lbs. Flammable liquids that are stored on a tank farm (e.g., a wholesale gasoline regional tank farm) where only transferring and storage are done are not covered by the PSM standard. They are, however, covered under WAC 296-24-330.

-001(2)(a)(i) and -005 Covered process--Hazardous waste operations

Does the PSM standard apply to the EPA-regulated and permitted RCRA (Resource Conservation and Recovery Act) hazardous waste treatment, storage and disposal (TSD) facilities, when such facilities keep on-site in one location a hazardous waste chemical in a concentration and quantity which exceeds the applicable threshold quantity of Appendix A. If so, why? If not, why not?

Employers of worksites with TSD facilities which contain covered processes must comply with the PSM standard. The requirements of the PSM standard are intended to eliminate or mitigate workplace catastrophic releases of highly hazardous chemicals and resulting employee exposure to explosion, fire and toxic hazards.

-0012(a)(i) and -005 Covered process--dispersal of inventory

Can an employer who keeps threshold quantities of highly hazardous chemicals listed in Appendix A to Chapter 296-67 WAC, such as ammonia, separated into smaller lots and used and stored in separate systems or locations, be exempt from the requirements of the PSM standard?

From a storage standpoint, the 296-67 standard would not apply to an employer who segregates his inventory by dispersing storage of highly hazardous chemicals, such as ammonia, in amounts which do not exceed the threshold quantity so that a release from one storage area would not contribute to or cause a release from others around the workplace. Additionally, an employer could reduce his on-site inventory of highly hazardous chemicals by ordering more frequent, smaller shipments so that they do not exceed the threshold quantities set forth in the PSM Standard.

The PSM standard's non-mandatory Appendix C suggests that, if reduced inventory of highly hazardous chemicals is not feasible, an employer might consider dispersing inventory to several locations on-site. When are such materials to be considered part of a single process?

Under the definition of "process" as provided by WAC 296-67-005, any group of vessels which are interconnected and separate vessels which are located such that a highly hazardous chemical could be involved in a potential release shall be considered a single process. Inventories of highly hazardous chemicals would not be considered to be adequately dispersed if the storage vessels are connected with or in proximity to a covered process such that they could be involved in a potential release.

What evaluation techniques are appropriate to determine adequate separation distances?

DOSH has not developed, nor is it aware of, any standard evaluation technique to determine adequate distances to separate chemical inventories. If an employer chooses to disperse highly hazardous chemicals on-site, the separation distances would have to be determined on a case-by-case basis, considering such factors as the nature of the chemicals and covered processes, total inventories, threshold quantities of pertinent chemicals, and facility layout.

-001(2)(a)(ii) Application--55-gallon drums

Would more than 10,000 pounds (4535.9 kg) of a flammable liquid stored together in 55-gallon (209-liter) drums be covered under the PSM standard?

For the purposes of the PSM standard, this would be considered exempt as storage in atmospheric tanks (notwithstanding the definitions of "containers" and "tanks" in WAC 296-24-330), unless the drums are near a covered process, as described in the Q & A on "flammable liquids" of this appendix. For the purposes of 296-24-330, 55-gallon (209-liter) drums are covered in the definition of "container."

-001(2)(a)(1) Covered Process--Flammable gases

For processes involving flammable gas mixtures, are the nonflammable components in a flammable gas mixture included when determining the threshold quantity?

The non-flammable components contribute to the determination of threshold quantity, i.e., 10,000 pounds (4535.9 kg) or greater amounts of a flammable gas, as defined in WAC 296-800-370 and noted below: **Gas, flammable** means: (a) A gas that at ambient temperatures and pressure forms a flammable mixture with air at a concentration of thirteen (13) percent by volume or less; or (b) A gas that, at ambient temperature and pressure, forms a range of flammable mixtures with air wider than twelve (12) percent by volume, regardless of the lower limit.

-001(2)(a)(ii) Covered process--Flammable liquids

Does the PSM standard apply to processes in a paint manufacturing facility, which include the mixing and blending of flammable liquids with other raw materials, and which typically involve few or no chemical reactions? Typically, the flammable products are processed below their normal boiling points and that several large batch vessels are located near each other, with an aggregate weight above the threshold quantity of 10,000 pounds (4535.9 kilograms).

The requirements of the PSM standard would apply to such operations. The exemption provided in the standard at 296-67-001(2)(a)(ii)(B) for situations involving flammable liquids applies only when such liquids are being stored in atmospheric tanks (where the tank pressure does not exceed 0.5 pounds per square inch gauge [p.s.i.g.]) or transferred and the liquids are kept below their normal boiling point without benefit of chilling or refrigeration. This exemption does not apply to a mixing and blending operation related to paint manufacturing.

-001(2)(a)(ii)(A) Application--Exceptions--Hydrocarbon fuels

Does the PSM standard apply to ceramic manufacturing facilities utilizing propane in amounts exceeding 10,000 pounds as the fuel for firing ceramic ware in a process which does not involve any other highly hazardous chemicals?

No. The PSM standard would not apply to such a situation.

Does gasoline used as a fuel to test run inboard and outboard engines fall within the scope of the PSM standard?

Gasoline used in such a manner does not fall within the scope of 296-67, because it is used as a fuel in this situation and thus meets the exception at 296-67-001(2)(a)(ii)(A). However, other DOSH standards, such as 296-24-330, Flammable and combustible liquids, would apply.

Does the PSM standard apply to a plant that has more than 10,000 pounds of hydrocarbon fuel on site where the fuel is used solely as a fuel for a furnace used to melt glass?

The requirements of 296-67 do not apply to this situation because 296-67-001(2)(a)(ii)(A) of the standard specifically excludes from coverage hydrocarbon fuels used solely for workplace consumption as a fuel if the fuel is not part of a process containing another highly hazardous chemical covered by the standard.

-001(2)(a)(ii)(A) Tote tanks

350-gallon tote tanks containing flammable liquids are used at a facility to refuel vehicles. Are they covered by the standard?

No. 296-67-001(2)(a)(ii)(A) exempts hydrocarbon fuels used solely for workplace consumption as a fuel (e.g., gasoline for vehicle refueling) if such fuels are not part of a process containing another highly hazardous chemical covered by the standard. They are, however, covered under 296-24-330.

-001(2)(a)(ii)(A) Fuels for heating

Are flammable liquids and gases used as fuels for such items as heaters or exchanges contained in (covered) processes also included within the coverage of the standard?

Furnaces, boilers, heaters, etc., fueled by flammable liquids or gases--regardless of the quantity of the fuel--used in processes that are otherwise covered by the PSM standard (i.e., the existence of a threshold quantity of another highly hazardous chemical) are considered part of the process and are covered by the PSM standard. Flammable liquid-or-gas-fueled furnaces, boilers, etc., used in processes not otherwise covered by the PSM standard are exempt from the standard.

-001(2)(a)(ii)(B) Tank farms

Are flammable liquids stored in a tank farm covered under the standard?

Atmospheric tanks containing flammable liquids at bulk transfer terminals are not covered. However, atmospheric tanks containing flammable liquids that have feeder connections to processes **are** covered by the standard.

EXAMPLE. Atmospheric tanks in an outside storage area contain a flammable liquid that is pumped to a mixing vessel. If the total quantity of flammable liquids in this equipment is at or above 10,000 pounds (4535.9 kg), then this is a covered process which includes, at a minimum, the storage tanks, the piping, and the mixing vessel.

-001(2)(a)(ii)(B) Flammable liquids

Does 296-67-001(2)(a)(ii)(B) exempt all flammable liquids stored or transferred which are kept below their normal boiling point without the benefit of chilling or refrigeration, including, but not limited to, flammable liquids in atmospheric tanks?

No. The exemption is limited to flammable liquids stored in atmospheric tanks or transferred which are kept below their normal boiling point without benefit of chilling or refrigeration. This exemption is applicable to flammable liquids in tanks, containers and pipes used only for storage and transfer (to storage), and not connected to a process or a process vessel. Similarly, stored flammable liquids in containers, including cans, barrels and drums, would be exempt from coverage by the PSM standard. We recommend you carefully consider the definition of "process" to determine further applicability of the PSM standard in situations where flammable liquids are stored in tanks or containers at a worksite.

-001(2)(b)(ii) Oil or gas well operations

Are single well processing facilities with equipment including separators, heat-treaters and storage tanks used in gas production (from non-H2S containing petroleum fluids) operations exempt from coverage under 296-67-001(2)(b)(ii), which excludes oil and gas well drilling and servicing operations?

The 296-67-001(2)(b)exemption of oil or gas well drilling or servicing operations is intended to cover all drilling operations and any well servicing operation including acidizing. Additionally, water separation facilities adjacent to or near the well (including tanks used primarily for water separation in conjunction with oil or gas well production) are not normally covered by the PSM standard. The following processes, when they involve at least threshold quantities of oil or gas, are covered by the PSM standard. Oil or gas well production fluids from several wells are processed by heating the fluids and physically separating the water from the gas or oil. The water is returned to the ground via a "down hole well" for disposal return to the strata from which it came. But if these oil or gas well drilling operations take place at "normally unoccupied remote facilities", then according to 296-67-001(2)(b)(iii), they are exempt from PSM standard coverage.

-001(2)(b)(iii) Meaning of "facility"

Can a facility contain more than one process?

A facility can include multiple processes. If multiple processes are interconnected, they may be considered a single process for purposes of the standard.

-005 Definitions

-005 "Process"

What are "aggregate threshold quantities"?

In accordance with the second sentence of the definition of "process," quantities of a particular hazardous chemical contained in vessels that are interconnected--and in unconnected vessels that may be adversely affected due to an incident at a nearby process--must be combined to determine whether the threshold level of a hazardous chemical has been reached. If the threshold level is exceeded by the combination of the amount in separate tanks and interconnected vessels, then all of these may be considered one process.

Is waste burning of covered solvents considered a process?

Yes.

-005 "Hot work"

"Spark-producing operations" include operations which use flame-or spark-producing equipment--such as grinders, welding, burning, or brazing--that are capable of igniting flammable vapors or gases.

-005 "Normally unoccupied remote facility"

"Normally unoccupied remote facility" means that employees are not permanently stationed at the remote location. This includes those sites for which periodic visits by employees may be made on a scheduled basis. Examples could include pump stations located miles from the main establishment. Employees may be assigned to check on the station as needed. The intent behind "remote" is that, due to the isolation of the process from employees by distance, such employees would not be affected by the consequences of a catastrophic release. Therefore, the remote location must be geographically separated from other facilities and employees such that employees would not be affected by an explosion, vapor cloud of toxic gas, or other consequence of an uncontrolled release at the remote site.

-009 Employee participation

-009 Employee participation

In implementing employee participation as required by 296-67-009 of the PSM standard, can an employer mandate that employees e.g., top operators of process units--provide the company with information such as step-by-step procedures for routine tasks performed on their operating units? Can the employer threaten disciplinary action for employees who do not cooperate?

The employee participation called for at 296-67-009 is intended to provide for a cooperative participatory environment and necessary flow of information from management to employees and from employees to management on process safety to eliminate or mitigate the consequences of catastrophic releases of highly hazardous chemicals in the workplace. Section 296-67-009(2) contains language taken from the Clean Air Act Amendments (CAAA) of 1990. As prescribed by the CAAA, the standard at 296-67-009(3) requires that PSM information developed by the employer be made available to employees and their representatives. Also, DOSH requires that an employer carefully consider and structure the plant's approach to employee involvement in the PSM program. The plan-of-action standard at 296-67-009(1) is intended to address this issue to ensure that the employer actively considers the appropriate method of employee participation in the implementation of the PSM program in the workplace.

-009(2) Consultation

What does consult mean? Can the employer simply inform the employees?

Consultation refers to a two-way dialogue between the employer and the employees and their representatives (where they exist), in which the employer elicits, and responds to, employees' concerns and suggestions bearing upon the elements of process safety management required under this standard. Consultation is therefore more than a way to inform employees about aspects of process safety; it is a process of seeking advice, criticisms, and suggestions from employees and their representatives. 1. The employer should establish a method for informing all employees and their representatives that their process safety concerns and suggestions are welcome. The employer must also establish a mechanism by which it will respond, orally or in writing, to such concerns and suggestions. 2. In addition, the employer should affirmatively solicit the suggestions and concerns of employees and their representatives, who, by virtue of their job responsibilities, actual knowledge, or representative positions, can reasonably be expected to make substantive contributions to the development and evaluation of specific elements of process safety management.

The standard requires employers to consult with "employees and their representatives." Is the term broad enough to include a representative of the international union? A consultant designated by the union local or international?

The standard requires consultation with "**employees and their representatives"**. The term "**employee representative**" is intended to mean **union representative** where a union exists, or an employee designated representative in the absence of a union. The term is to be construed broadly, and may include the local union, the international union, or an individual designated by these parties, such as the safety and health committee representative at the site or a non-employee consultant. In the absence of a union, employees have a right under the standard to designate a representative to participate in the consultation process. With respect to the PHA team, in all cases it must consist of one or more persons **knowledgeable about** the process. The intent of the consultation requirement at 296-67-009(2) is not to compel the inclusion of any person(s) who are not knowledgeable; ideally, the employer and employees/employee representatives should reach a consensus on including the most capable parties.

-009(2) Consultation--contractors

Must the employer consult with employees of contractors?

A host employer must consult with employees of covered contractors and their representatives, to the same extent that it must consult with similarly situated direct hire employees. Therefore, the host employer must establish a method for informing all contractor employees and their representatives that their process safety concerns and suggestions are welcome, and will be responded to. In addition, the following non-exclusive examples illustrate circumstances under which the host employer may be required to solicit the advice and suggestions of specific contractor employees about specific aspects of process safety:

1. Contract employees who function as process operators on covered processes, or perform routine maintenance on covered processes, should be consulted to the same extent as equivalent direct hire operating and maintenance employees, respectively.

2. Contract employees who routinely interface with a host employer's Management of Change program should be consulted on the effectiveness of the program as it relates to their jobs and based upon their interaction with it.

3. Contract employees who routinely participate in activities pursuant to mechanical integrity should be consulted on the effectiveness of the program as it relates to their jobs and based upon their interaction with it; e.g., contract employees should be encouraged to identify any deficiencies they observe in the host employer' s program.

4. Contract employees who have unique experience or knowledge concerning the operation, maintenance, or safe performance of any portion of a covered process should be consulted, as appropriate, on that portion of the process during the PHA.

5. Contract employees who routinely interface with the host employer's safe work practices (such as, for example, the employer's lockout/tagout rules, hot work permit procedures, and confined space entry procedures) should be consulted as to the effectiveness of those practices.

Host employers can consult with contractor employees and their representatives directly, or through the contractor employer. Contractor employers share responsibility for ensuring that there is consultation with their employees.

-009(3) Access

What does "access" mean? Does this mean simply make it available at a central location? Does the employer have to make copies for employees if requested?

The intent of **access** under this standard is for the information to be made available for employees and their representatives in a reasonable manner. Reasonable access may require providing copies or loaning documents. The trade secret provision of the standard permits the employer to require confidentiality agreements before providing the information.

-009(3) Equal access to information

Under 296-67-009(3), the employer is required to provide access to process hazard analyses and all other information to be developed under this standard to employees of covered contractors, to the same extent that it must provide access to direct hire employees, if similarly situated. Contract employers share responsibility for assuring that their employees are provided with the requested information.

-013 Process safety information

-013 Retention of information

How long must the employer maintain process safety information?

In order to demonstrate compliance with this paragraph, and to meet the purpose of the standard, the process safety information is to be kept for the lifetime of the process, and updated whenever changes other than "**replacement in kind**" are made.

-013(2)(b) Original process safety information not present

If process safety information on the original technology does not exist, what must the employer do?

The employer must obtain or generate the missing information. If the information on the original technology does not exist, then the employer may delay the development of this information until the process hazard analysis (PHA) is initiated, but in no case later than the applicable dates specified at 296-67-017(1). However, the other information required by this section must be compiled before conducting any PHA. The information on the technology must be gathered as the PHA's are conducted in accordance with the priority schedule developed by the employer.

-013(3)(c) Older codes--PSM standard deadlines

For equipment based on old design codes, the employer must determine and document that the equipment is designed and operated safely. By what date must the employer do this? Specifically:

- **When must the employer determine adequacy of design based on old codes, and**
- **How much time does the employer have to make corrections?**

Generally speaking, the time frames which apply to implementation of the PHA's also apply to this paragraph. Such documentation must be completed either before or in conjunction with the development of the PHA, except where a pre-startup safety review is required, in which case the documentation must be completed before startup. For older equipment, this may require verification that the design and construction are safe for the intended application. Where corrective action is required as a result of the PHA, it must be completed as soon as possible pursuant to subsection 296-67-017(5). **EXCEPTION:** For actions required by a pre-startup safety review (see 296-67-033(2)), such corrective action must be implemented prior to the startup if the correction is safety-critical.

-017 Process hazard analysis

-017(1) PHA priority

What rationale must employers use to determine the priority for conducting the process hazard analyses? May the rationale include age, history, extent of employee exposure, etc.?

The appropriate priority for conducting PHA's is to be determined by using all of the criteria identified in this paragraph, e.g., extent of the process hazards (catastrophic potential), age of the process, number of potentially exposed employees, and operating history. Other appropriate factors may also be considered in establishing the priority. The documentation required by this paragraph shall demonstrate the underlying rationale for the prioritization.

-017(1) PHA priority--"as soon as possible"

Section -017 contains a five year phased-in compliance schedule for completing process hazard analyses. The provision mandates that employers first "determine and document the priority order for conducting process hazard analyses" and then complete 25 percent or more of the analyses each year after the second year. (See 57 Fed. Reg. 6378/3.) However, because DOSH believes that "plants with a limited number of processes, with simple processes, or which have already completed a number of process hazard analyses" will need less time to complete their analyses (57 Fed. Reg. 6375/3), it included a specific provision requiring that analyses "be completed as soon as possible." WAC 296-67-017(1)

-017(1) PHA completion dates

What is the time frame for completion of the initial PHAs and for updating and revalidating them?

In accordance with 296-67-017(1), all initial PHAs must be completed as soon as possible, with at least 25 percent of them completed by May 26, 1994; 50 percent by May 26, 1995; 75 percent by May 26, 1996; and all completed by May 26, 1997. Initial PHAs must be updated and revalidated at least every 5 years thereafter (see 296-67-017(6)). When employers update and revalidate a PHA before the 5-year deadline, the subsequent update and revalidation must be completed within the next 5-year period.

-017(1) PHAs--Required site-by-site

If a natural gas company has five sites with facilities performing the same process, does a separate PHA need to be performed for each site, for each facility at these sites, or for each process at each facility?

The PSM Standard is applicable, on a site-by-site basis, to each worksite which has one or more facilities containing one or more processes involving one or more of the covered highly hazardous chemicals. A worksite may be simply one facility containing a single process. (See the definition of "facility" in section 296-67-005). On the other hand, a worksite may be a complex of facilities, each containing one or more processes. Under 296-67-017(1), employers are required to perform initial PHAs on processes involving highly hazardous chemicals covered by the PSM standard. An employer may use a generic hazard analysis approach for the same (or nearly the same) covered process at an individual worksite. The employer must account for variations (e.g., differences in siting, incident histories, technology, equipment, or operations) for each process covered by this generic approach. Generic process hazard analysis is addressed in section 4. of nonmandatory Appendix C of 296-67, Compliance Guidelines and Recommendation for Process Safety Management.

-017(2) Process hazard analysis--"appropriate methodology"

What type of methodology must employers use in the PHA in order to be sure it is "appropriate"?

Employers are expected to use sound judgment, on a case-by case basis, to determine an appropriate methodology for the process hazard analysis for each covered process. It is not the intent of the standard to require a PHA methodology that is excessively burdensome, but rather one that is appropriate and which will have the capability to elicit all hazards, defects, failure possibilities, etc., for the process being analyzed, and also have the capability to address all the factors at 296-67-017(3).

-017(3) Meaning of "control"

The rule requires that the PHA address the "control" of the hazards. What is meant by: "identification, evaluation, and control of process hazards"--?

The PHA is intended to identify and evaluate acceptable controls for process hazards. The evaluation of the hazards must include all the steps set out in subdivisions -017(3)(a)-(g), using a methodology consistent with subsection -017(2). Through the timely resolution of the PHA findings and recommendations, the PHA is intended to control process hazards.

-017(3)(d) Quantitative determination

Must the employer make a quantitative determination to determine the consequences of failure of the controls?

The intent of this paragraph is to require the employer to at least identify each type of control as well as identify the possible effects of the failure of the listed control. DOSH believes employers can determine the consequences of a failure of these controls, and establish a reasonable estimate of the safety and health effects on employees without conducting a specialized quantitative evaluation.

-017(3)(e) Facility siting

What does "facility siting" mean?

With respect to existing plants, "siting" does not refer to the site of the plant in relation to the surrounding community. It refers, rather, to the location of various components within the establishment.

-017(5) Abatement = shutdown

Hazards may be identified for which a recommended solution/action might be the shutdown of the process. For example, several processes might be located very close, and if fire were to occur a domino effect might result in a catastrophic release. The resolution may be to separate the processes, but there is no additional property on which to expand. What is required of the employer?

In such situations, the employer could implement protective measures to minimize the probability of a major uncontrolled release. An appropriate response in this specific case, for example, might be to install additional detection systems which may be interlocked to deluge systems for tanks and process equipment, to provide additional protective measures for onsite personnel, and to implement administrative controls, such as reducing inventories and numbers of exposed personnel.

-017(5) Timeliness

Employers must "promptly" address the problems identified in the PHA in a "timely manner," and complete actions "as soon as possible." What time frame did DOSH intend here?

The standard's intent is for the employer to take corrective action as soon as possible. As soon as possible means that the employer shall proceed with all due speed, considering the complexity of the recommendation and the difficulty of implementation. DOSH expects employers to develop a schedule for completion of corrective actions, to document what actions are to be taken, and to document the completion of those actions as they occur.

-017(5) Addressing PHA team's findings and recommendations

Section -017 of the standard requires that a team with expertise in engineering and process operations conduct a process hazard analysis, containing specific findings and recommendations for each covered process. The employer is then required to promptly "address" and "resolve" the team's findings, document the actions taken, and communicate these actions to the affected employees. WAC 296-67-017(5).

DOSH considers an employer to have "resolved" the team's findings and recommendations when the employer either has adopted the recommendations, or has justifiably declined to do so. Where a recommendation is rejected, the employer must communicate this to the team, and expeditiously resolve any subsequent recommendations of the team.

An employer can justifiably decline to adopt a recommendation where the employer can document, in writing and based upon adequate evidence, that one or more of the following conditions is true:

1. The analysis upon which the recommendation is based contains material factual errors;

2. The recommendation is not necessary to protect the health and safety of the employer's own employees, or the employees of contractors;

3. An alternative measure would provide a sufficient level of protection; or

4. The recommendation is infeasible.

-017(7) Retention

How long must the process hazard analyses, updates, and revalidations be retained?

For the life of the process.

-021 Operating procedures

-021(1) Written operating procedures

Many employers have computerized process control systems and safety interlock systems software. Can simplified loop diagrams or narrative descriptions be used to describe the logic of software and the relationship between the equipment and computerized process control systems, to meet the requirements for written operating procedures at 296-67-021(1)? Can system logic flow charts or narrative descriptions of the computerized safety interlock systems be used to meet these same requirements?

It is anticipated that employers would include loop diagrams, flow charts, and narrative descriptions of control and interlock systems in their compilations of written process safety information required by 296-67-013 before conducting any PHAs required by 296-67-017. Written operating procedures must be developed to provide clear instructions for safely conducting activities involved in each covered process, consistent with the process safety information and with the associated PHA. Simplified diagrams, flow charts, and narratives could be used in conjunction with instructions to meet the requirements for written operating procedures at 296-67-021(1).

-021(1)(c)(iii) "Control measures to be taken if physical contact or airborne exposure occurs"

Does this mean first aid, or industrial hygiene services?

It primarily means first aid procedures or emergency medical attention, which should be consistent with the information on the material safety data sheet.

-025 Training

-025(1)(a) Initial training

Training in an overview of the process, and in safety and health hazards, emergency operations, and safe work practices, must have been completed by May 26, 1992. In situations where operating procedures were already in place, training in those existing procedures was required by May 26, 1992. Initial training shall have been provided by that date, based on existing procedures and available process information. As new information and procedures are developed, refresher training must be provided in accordance with subsection -025(2).

-025(1)(b) Initial training--"grandfathering"

What is required in the employer's written certification regarding employees whose initial training is "grandfathered"?

Where employees involved in operating the process have not received the initial training required under -025(1)(a), but have been involved in operating the process safely for a period of time prior to May 26, 1992, the employer may waive the initial training requirement by **certifying in writing** that the employee has the required knowledge, skills, and abilities to safely carry out the duties and responsibilities as specified in the operating procedures, written or otherwise. Such certification may be based on on-the-job evaluation or other equivalent determination methods. When new operating procedures--which must be written--are subsequently developed, the employer must give training to operating employees prior to their implementation.

-025(2) Refresher training

Employees have to be given refresher training at least every 3 years--measured from when?

The time period for refresher training of an employee involved in operating a process is to be measured from the date of the employee's last training [or "grandfathering," as allowed at -025(1)(b)] in the overview and current operating procedures of the process.

Under what circumstances must refresher training be provided more often than every 3 years?

Employers, in consultation with employees, shall determine the appropriate frequency, which may be based on consideration of such factors as deviations from standard operating procedures, recent incidents, or apparent deficiencies in training.

Is training under "management of change" considered to be refresher training?

No. It is an independent training requirement, in addition to other training requirements of the standard.

-025(3) Training documentation

This paragraph requires the employer to make sure that operators "understand" the training provided to them under this section. Is some method of testing required?

There must be some positive means taken by the employer to determine if employees have understood their training and are capable of adhering to the current operating procedures of the process. This could include the administration of a written test, although the standard does not require that a formal written test be used. Other means of ascertaining comprehension of the training, such as on-the-job demonstrations, etc., are acceptable, as long as they are adequately documented.

-029 Contractors

-029 Scope of activities

The list of covered and exempted activities in this section is meant to be illustrative of potential contractor activities. The standard covers all contractor activities that have the potential for affecting process safety. Therefore, section -029 applies to all contractor activities on or adjacent to a covered process, except those incidental activities that do not influence process safety, such as janitorial work, food and drink services, laundry, delivery or other supply services. Consequently, contractors performing construction, demolition, equipment installation and other work that bay affect the safety of a covered process must comply with the requirements of this paragraph. Furthermore, section -029 is not the only part of the process safety management standard that applies to contractors. In appropriate circumstances, other provisions of the standard apply.

-029 Scope of activities--construction work

Do contractors performing construction work at a site covered by the PSM standard also have to comply with the rule requirements in Chapter 296-155 WAC?

Contractors performing construction work at a site covered by the PSM standard must comply with all applicable rule requirements in Chapter 296-155 WAC. See WAC 296-155-012, for definition of terms "construction work" and "repair".

-029(1) and (2) Contractors and subcontractors

Section -029 applies to all subcontractors whose work falls within the scope of covered work as established in -029(1). The host employer and the general contractors are both responsible for ensuring that the duties contained in -029(2) are performed; this applies to inquiring into the safety records of their subcontractors, informing the subcontractor as to the known potential hazards, the emergency action plan, and safe work practices, and ensuring the subcontractor's compliance with the standard. Furthermore, under WAC 296-155029(2)(e), the host employer has the obligation to assure that the contract employer and the subcontractor are properly performing their obligations under WAC 296-155-029(2) with respect to their subcontractors' compliance with the standard.

The intention is that host employers and contractors exercise responsible oversight of their respective contractors' and subcontractors' performance of safety and health requirements under the standard.

-029(2) Contractors--Employer responsibilities--Training

How much of the burden of training contractor employees is placed on the employer?

The burden of training contractor employees is on the contractor employer. However, under WAC 296-67-029(2)(e), the host employer shall periodically evaluate the contract employer's performance with respect to the (contract) employee instruction and training requirements in WAC 296-67-029(3).

NOTE: The employer must inform a contract employer of the hazards related to the contractor's work and the process [as noted in WAC 296-67-029(2)(b) and (c)].

Although the standard places the primary responsibility for providing training to its employees on the contract employer itself, the host employer bears the responsibility to "periodically evaluate the performance of contract employers in fulfilling their obligations as specified in subsection -029(3)." WAC 296-67-029(2)(e). Such "obligations" clearly include training obligations. The standard also requires the host employer to select a contract employer only after evaluating its safety performance and programs [-029(2)(a)], and to inform the contract employer about the specific hazards associated with the process [-029(2)(b)] and the provisions of the emergency action plan [-029(2)(c)].

If contract employees are involved in operating a process or maintaining the on-going integrity of process equipment, then they must receive training in accordance with the specific training requirements set forth in sections -025 and -037, respectively. In order to satisfy its obligations under -029(2)(e), the host employer must ensure, through periodic evaluations, that the training provided to these contract employees by the contract employer is in fact equivalent to the training that the standard requires for direct hire employees. Such training need not be identical in format or content or context to training given to the host's employees. The critical element is that information required by the standard must be conveyed to and learned by contract employees as well as direct hire employees. The obligation may be satisfied by joint training or by separate training.

Moreover, -029 requires that every employee of a covered contractor be trained in the work practices necessary to perform safely his or her job. The contract employee must be able to perform his or her own job tasks safely and should receive:

(a) training prior to beginning work on or near a covered process, which should encompass (i) instruction regarding known process hazards related to his or her job, including training in the applicable provisions of the emergency action plan; and (ii) training in the safe work practices adopted by the host employer and the contract employer; and

(b) additional training as necessary (i) to prepare the employee for changes in the operations or work practices at the facility and (ii) to ensure that the employees' understanding of the applicable safe work practices and other rules remains current.

-029(2)(a) Contractors--Employer responsibilities--Selecting a contractor

When selecting a contractor, an employer has to evaluate the potential contractor's safety performance and programs. Must the employer document this? If so, to what extent?

The standard does not require the employer to document the evaluation of the information obtained regarding contractor safety performance and programs. However, DOSH compliance officers may review records about these aspects of the selection process and to determine if the employer has met the intent of this provision.

-029(2)(f) Contractors--Employer responsibilities--Contractor injury and illness log

What type of injury and illness log does an employer have to maintain regarding contract employees?

If the contract employer is willing to share all its OSHA log documents with the employer, and if those logs and reports specifically indicate which injuries and illnesses are related to process areas, then such records would be acceptable to DOSH. Acceptable alternatives would be for the employer to develop a contract employee injury and illness log separately for each contractor, or a combined log for all contractors if the combined log distinguishes among contractors.

-033 Pre-startup safety review

-033(2)(a) Pre-startup safety review--equipment in accordance with design specifications

The employer is responsible for ensuring that process equipment meets design specifications prior to startup. For equipment that has been modified to the extent that a change to the process safety information is required, the employer must ensure that the process safety information has been modified prior to startup. (Note also the requirements of 296-67-037(4)(b)--Mechanical integrity--Inspection and testing.

-037 Mechanical integrity

-037(1) Application

"Pressure vessels and storage tanks" **includes** "pressurized" storage tanks; i.e., tanks designed to be used above atmospheric pressure, as well as non-pressurized (atmospheric) storage tanks.

-037(2) Written Procedures

The purpose of this provision is to require written procedures in adequate detail to ensure that the specific process equipment receives careful, appropriate, regularly scheduled maintenance to ensure its continued safe operation. A "breakdown" maintenance program (i.e., a program wherein action is taken only when something breaks down) does not meet the requirements of this paragraph.

-037(2) Written Procedures

Do these written procedures need to be specific to each vessel, each type of vessel, or each group of equipment types listed?

The procedures need to be specific to the type of vessel or equipment. Identical or very similar vessels and items of equipment in similar service need not have individualized maintenance procedures. Each procedure must clearly identify the equipment to which it applies.

-037(3) Training for process maintenance activities

As OSHA indicated in its preamble, subsection -037(3) requires that employers provide maintenance employees with "on-going" or "continual" training adequate "to assure that they can perform their jobs in a safe manner." (See 57 Fed. Reg. 6390/1.) In this regard, the section clearly contemplates that new maintenance employees be trained before beginning work at the site, and all maintenance employees receive additional training appropriate to their constantly changing job tasks.

Moreover, although "maintenance employees need not be trained in process operating procedures to the same extent as those employees who are actually involved in operating the process" (57 Fed. Reg. 6390/1), they must be trained in all "procedures applicable to the employee's job tasks to assure that the employee can perform the job tasks in a safe manner." WAC 296-67-037(3). Thus, a maintenance worker sent to work on a process breakdown must be trained in operating procedures that are relevant to the repair or installation on which he or she is working.

Finally, DOSH intends that employers incorporate all safety-related topics applicable to maintenance tasks into the ongoing training program required by section -037 to assure that maintenance employees can perform their job tasks in a safe manner. Thus, in order to train maintenance workers in "procedures applicable" to their job tasks under paragraph an employer must, in appropriate circumstances, train these workers in the safe work practices required under subsection -021(5), in the written procedures to manage change under section -045, and in the appropriate provisions of the emergency action plan under section -053 of the standard. These provisions, in turn, may implicate other DOSH general industry requirements, such as, for instance, the training requirements of the lockout/tagout standard (See WAC 296-803-600).

-037(5) Equipment deficiencies

If equipment is found to be operating outside acceptable limits, must the process be shut down and the equipment deficiencies corrected before further use?

To ensure the ongoing mechanical integrity of the covered process, equipment deficiencies must be corrected promptly if the equipment is outside the acceptable limits specified in the process safety information. There may be situations where it may not be necessary that the deficiencies be corrected "before further use" as long as the deficiencies are corrected in a safe and timely manner when necessary means (e.g., protective measures and continuous monitoring) are taken to ensure safe operation.

NOTE: Operating equipment outside acceptable limits is considered to be a deficiency.

-037(6)(b) Quality assurance

If an installation is being done by contractors, does this require the employer to implement a quality assurance program to monitor the activities of these contractors?

The employer is responsible for ensuring that equipment is installed consistent with design specifications and manufacturer's instructions. This may require the employer to be involved in the review, inspection, certification, and quality assurance of work performed by contractors.

-045 Management of change

-045 Management of change

What does "change" encompass?

Any change whatsoever that may affect a covered process triggers the management of change provisions. The only exception to this is when there is a replacement in kind.

Do the management of change procedures apply to items such as gaskets?

Replacements in kind are not covered. If a new gasket is to be installed that is of different material, composition, shape, size, or design, then a management of change would be required.

-049 Incident investigation

-049(5) Addressing team's findings

Section -049 requires that a team of knowledgeable individuals investigate every catastrophic incident and "near-miss," and likewise requires that the employer promptly "address and resolve" the team's recommendations and document corrective action. [See 296-67-049(5).]

As with the similar provision in section -017, this provision was designed to require the employer to respond to the team's findings and recommendations, while at the same time allowing the employer the flexibility not only to reject proposals that are erroneous or infeasible, but also to modify a recommendation that may not be as protective as possible or may be no more protective than a less complex or expensive measure. (See 57 Fed. Reg. 6395/3.)

DOSH considers an employer to have "resolved" the team's findings and recommendations when the employer either has adopted the recommendations, or has justifiably declined to do so. Where a recommendation is rejected, the employer must communicate this to the team, and expeditiously resolve any subsequent recommendations of the team.

An employer can justifiably decline to adopt a recommendation where the employer can document, in writing and based upon adequate evidence, that one or more of the following conditions is true:

1. The analysis upon which the recommendation is based contains material factual errors;

2. The recommendation is not necessary to protect the health and safety of the employer's own employees, or the employees of contractors;

3. An alternative measure would provide a sufficient level of protection; or

4. The recommendation is infeasible.

-057 Compliance audits

-057(1) Compliance audits--required frequency

Employers must certify at least every 3 years that they have evaluated compliance with 296-67. Under 296-67-057(1), employers must conduct compliance audits in a timely manner to meet this certification requirement. The first certification is required no later than May 26, 1995. When employers conduct compliance audits and certify compliance with 296-67 before May 26, 1995, the subsequent certification must be within 3 years from the certification date.

NOTE: It may be necessary for employers to conduct compliance audits and certify that they have evaluated compliance more frequently than every 3 years, because of significant or numerous deficiencies disclosed by the previous audit, or for other reasons.

-057(4) Documenting actions based on compliance audit findings

The purpose of this paragraph is to ensure that employers determine an appropriate response to each of the report findings and, if employers identify a deficiency that needs to be corrected, that they document the correction of the deficiency. The appropriate response to each of the report findings must be **promptly** documented. The correction of any identified deficiency must be documented as soon as possible after the corrective action is taken.

APPENDIX C

Resources for Compliance with the PSM Standard

ACC	American Chemistry Council
AGA	American Gas Association
AICHE/CCPS	American Institute of Chemical Engineers / Center for Chemical Process Safety
AIHA	American Industrial Hygiene Association)
ANSI/ASHRAE	American National Standards Institute/American Society of Heating, Refrigeration, and Air Conditioning Engineers
API	American Petroleum Institute)
ASME	American Society of Mechanical Engineers
ASNT	American Society of Non-Destructive Testing
ASTM	American Society of Testing Materials)
AWS	American Welding Society
CGA	Compressed Gas Association
CI	Chlorine Institute
CMA	Chemical Manufacturers Association
CSB	Chemical Safety Board
EPA	Environmental Protection Agency
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
IIAR	International Institute of Ammonia Refrigeration
IME	Institute of Makers of Explosives
ISA	Instrument Society of America
NACE	National Association of Corrosion Engineers
NBIC	National Board Inspection Code
NFPA	National Fire Protection Association
NSC	National Safety Council
OSHA	Occupational Safety and Health Administration
SOCMA	Society of Chemical Manufacturers and Affiliates
TAPPI	Technical Association of Pulp and Paper Industry

APPENDIX D

Recommended Guidelines for 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.

REGIONAL OFFICE COORDINATION

Coordination within the Region is absolutely essential in the orderly conduct of a PQV inspection. The Compliance Manager (CM), Supervisor, 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 if possible. Equally important, team participants should not be directed or "asked" to do assignments while they are engaged in the PQV inspection if possible. An obvious exception would be court hearings, over which the Region has little control.

The CM should designate a contact person in the Regional Office to coordinate and oversee all aspects of the inspection. The contact person should be a supervisor, safety or industrial hygiene (IH), who is familiar with the PQV concept. In addition to providing Regional 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 CM 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 training. Newer compliance officers can be utilized in the inspections, but not as a substitute for regular team members.

The ideal team should consist of two safety compliance officers/engineers, two industrial hygiene compliance officers, an administrative support person and a construction specialist. However, where this is not possible, a smaller team that consults with other qualified individuals as needed is acceptable. The team leader could be from either discipline in the team.

The team leader should be an experienced CSHO, 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 DOSH 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 Regional Office contact 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 compliance officer with some computer skills and organizational abilities. The support person would be responsible for organizing, labeling and filing the many documents that will become part of the case file. An accommodated CSHO could also review the documents and document requests to assure the request was properly fulfilled. In addition, an accommodated CSHO 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. 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 Regional 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 in other regions 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 DOSH 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.