

# Health & Safety Alert

## OSHA Initiates Special Emphasis Program for the Petrochemical Industry

A copy of the new OSHA Special Emphasis Program in the Petrochemical Industry (PETROSEP) is attached. This program applies only in OSHA Regions II, III, V, and VI (New York, Philadelphia, Chicago, and Dallas). The states covered are Delaware, Illinois, Louisiana, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Texas, West Virginia, plus any state-plan state that chooses to adopt a similar program. The program effects the following SIC codes:

- o 2821 -- Plastic materials, synthetic resins, and nonvulcanizable elastomers;
- o 2869 -- Industrial organic chemicals, not elsewhere classified; and
- o 2911 -- Petroleum refining.

OSHA is targeting the 26 largest petrochemical and petroleum refining companies with facilities in these four regions. All of these companies have over 2,500 employees. Within a year, OSHA intends to conduct a "wall to wall" inspection in one of the largest facilities of each of the 26 companies. The inspections will cover broad aspects of facility operations including:

- o management commitment and employee participation;
- o workplace analysis;
- o hazard prevention and control; and
- o safety and health training.

The results of the inspection program will have an impact on OSHA's future actions to ensure that proper precautions against major catastrophes are in place. OSHA is currently sponsoring a study, conducted by the John Gray Institute, on how industry's reliance on contract labor affects the safety and health of workers. Additionally, OSHA has proposed regulations on managing process safety hazards and has scheduled a January 1991 major conference on chemical process safety among industry, labor and government.

CMA Contact: David A. Hastings, 202/887-1280

September 5, 1990



CHEMICAL  
MANUFACTURERS  
ASSOCIATION

2501 M Street, NW  
Washington, DC 20037

202-887-1100  
Telex 89617 (CMA WSH)

VVV 000013656

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

Rulemaking, Federal Register, Vol.55, No.137,  
FR 29150, July 17, 1990.

6. OSHA Instruction STP 2.22A, CH-2, January 29, 1990, State Plan Policies and Procedures Manual.
- D. Action. Regional Administrators and Area Directors in Regions II, III, V, and VI shall ensure that the policies and procedures explained in this notice are implemented in scheduling and conducting inspections.
- E. Expiration Date. This notice expires September 30, 1991.
- F. Federal Program Change. This notice describes a Federal program change which affects State programs. Each Regional Administrator shall:
  1. Ensure that a copy of this change is promptly forwarded to each State designee, using a format consistent with the Plan Change Two-way Memorandum in Appendix P, OSHA Instruction STP 2.22A, CH-2.
  2. Explain the technical content of this change to the State designees as requested.
  3. Notify the State designees that they may but are not required to participate in this special emphasis inspection program.
  4. Ensure that State designees are asked to acknowledge receipt of this Federal program change in writing to the Regional Administrator as soon as the State's intention is known, but not later than 70 calendar days after the date of issuance (10 days for mailing and 60 days for response). This acknowledgment must include a statement indicating whether the State wishes to participate in the special emphasis inspection program.
    - a. If the State chooses to conduct its own inspections, it must submit either a revised version of this notice, adapted as appropriate to reference State law,

**U.S. Department of Labor**

Assistant Secretary for  
Occupational Safety and Health  
Washington, D.C. 20210



OSHA Notice CPL 2

Directorate of Compliance Programs

**Subject:** Special Emphasis Program in Petrochemical Industries, Standard Industrial Classification (SIC) Codes 2821, 2869, and 2911

- A. Purpose. This notice provides policies and procedures for inspections under the Special Emphasis Program (PETROSEP) in petrochemical industries (SIC codes 2821--Plastic Materials, Synthetic Resins, and Nonvulcanizable Elastomers; 2869--Industrial Organic Chemicals, Not Elsewhere Classified; and 2911--Petroleum Refining) focusing primarily on determining whether that management systems governing safety and health procedures for maintenance activities, contractor activities, and operations are in place to control risk and prevent disaster.
- B. Scope. This notice applies only in OSHA Regions II, III, V, and VI.
- C. References.
1. OSHA Instruction CPL 2.45B, June 15, 1989, the Revised Field Operations Manual (FOM).
  2. OSHA Instruction CPL 2-2.45, September 6, 1988, Systems Safety Evaluation of Operations with Catastrophic Potential.
  3. OSHA Instruction PUB 8-1.5, August 14, 1989, Guidelines for Pressure Vessel Safety Assessment.
  4. "The Phillips 66 Company Houston Chemical Complex Explosion and Fire," A Report to the President, April 1990, U.S. Department of Labor, OSHA.
  5. Process Safety Management of Highly Hazardous Chemicals, 29 CFR 1910.119, Notice of Proposed

VVV 000013657

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

regulations and administrative structure, or a cover sheet describing how references in this notice correspond to the State's structure. The State's acknowledgment of the Plan Change Two-Way Memorandum may fulfill the plan supplement requirement if the appropriate documentation is provided.

- b. If the State adopts an alternative to Federal guidelines, the State's submission must identify and provide a rationale for all substantial differences from Federal guidelines in order for OSHA to judge whether a different State procedure is as effective as comparable Federal guidelines.

**5. Advise State designees of the following:**

- a. OSHA will provide State enforcement staff the opportunity to accompany all or a portion of a Federal inspection conducted under this program for the purposes of their receiving on-the-job training.
  - (1) States wishing to take advantage of this opportunity should contact their Regional Administrator to make the necessary arrangements.
  - (2) Regional Administrators should communicate any such request for State accompaniment that cannot be fulfilled within their own region to the Office of Field programs for coordination with other regions.
- b. OSHA will assist States that wish to develop special emphasis programs with a somewhat different focus from the Federal Program, for example, related SIC codes, smaller establishments, etc.
  - (1) OSHA will provide the States a computer listing of the largest establishments in each of the States with petrochemical plants meeting the

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

criteria for inspection under the Federal special emphasis program.

- (2) Any States wishing further assistance in developing more comprehensive lists of subject establishments or a modified special emphasis inspection universe should contact their Regional Administrators, who will forward any such request to the Director of OSHA's Office of Data Analysis for action.
6. Provide appropriate assistance, upon request, to States that are participating in the special emphasis program, or administering their own parallel programs, in conducting State inspections of petrochemical industry firms.
7. Review policies, instructions and guidelines issued by participating States to determine that this change has been communicated to State program personnel.

**G. Background.**

1. Past enforcement experience with the chemical industry (for example, CHEMSEP) indicates that conducting systems safety evaluations can be very time-consuming and resource intensive. The CHEMSEP program was designed to focus primarily on the evaluation of systems safety for processes that have potential for catastrophes. Those inspections identified numerous hazards. Many citations were issued as a result of the CHEMSEP inspections, and the hazards were either corrected by requiring industry to comply with OSHA requirements or other equivalent methods of abatement.
2. Recent catastrophic explosions in the petrochemical industries alerted OSHA to the need for this special emphasis program. After the occurrence of the catastrophe at the Phillips 66 Company in October 1989, which took 23 lives and cost hundreds of millions of dollars, OSHA began to develop a special emphasis program to investigate the extent of

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

managers, and finally inadequate emergency controls in process safety are potential sources of failure.

7. Industries within the SIC codes 2821, 2869, and 2911 were selected because of their high potential for fire, explosion, or toxic chemical releases, as described in the above two incidents.
8. The selection of Regions II, III, V, and VI for this PETROSEP is based on the fact that higher concentrations of petrochemical industries exist in the Federal enforcement States in these regions.

H. Inspection Scheduling. Scheduling of inspections for establishments in SIC codes 2821, 2869, and 2911 shall be conducted in accordance with the procedures defined in the FOM, except as modified in the following sections.

1. Establishments for this PETROSEP shall be selected by the Office of Data Analysis from firms with more than 2500 employees and with establishments within the four participating Regions and within at least one of the three identified primary SIC codes listed in a commercially available listing. Firms with establishments in more than one SIC shall be listed only once for this PETROSEP.
2. The largest manufacturing facility within each identified firm (in terms of number of employees) within the jurisdiction of the affected Federal Regions shall be listed by Area Office and by Region.
  - a. The largest establishment within each firm shall be selected for inspection unless the establishment has less than 250 employees or unless an Area Office is thereby overburdened, that is, if it is assigned more than three such establishments.
  - b. In the latter case the second largest establishment of the firms listed within

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

similar hazards throughout the petrochemical industries. Another devastating explosion at an ARCO facility in July 1990 in Texas, which took 17 lives, further magnified the need for this special emphasis program.

3. Available evidence indicates that these explosions were related to maintenance activities involving contractors. OSHA's past experience also indicates that many of the fires and explosions that occur in these types of facilities relate to maintenance activities and often involve outside contractors.
4. OSHA's investigation of the Phillips disaster (Chapter XII of the Phillips Report) found that "contract employees receive significantly less safety and health training and are less knowledgeable of workplace hazards in the petrochemical industries."
5. The Department of Labor, in the Phillips Report, proposed several actions to be taken toward the mitigation of these catastrophic events. One of these proposed actions states that "OSHA will revise the current system of setting agency priorities to identify and include the risk of catastrophic events in the petrochemical industry." Based on the above factors, OSHA is initiating this PETROSEP to minimize or mitigate recurrences of such catastrophic events and to test new approaches to investigation and enforcement.
6. This notice is provided because of the immediate need to identify the causes of potentially catastrophic events that may occur in the petrochemical industries and more importantly to minimize or entirely eliminate them. These events can only occur because of a failure of safety and health management systems in the entire petrochemical production process. Such factors as lack of sufficient attention to maintenance activities, inadequate enforcement of permit systems (such as hot work permits and linebreaking permits), inadequate supervision and oversight of outside contractors by company

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

**I. Scope of Inspection.** Inspections under this PETROSEP shall evaluate the safety management systems aspects of chemical production processes, maintenance, servicing, construction and repair.

1. All the contractors who are present at the establishment shall be inspected during the course of the inspection. This will extend the inspection to most areas of the plant allowing for the CSHOs to observe conditions, interview contractor and the facility employees, and to evaluate safety and health of general plant and contractor operations. Physical hazards identified in these, as well as any other, areas of the plant shall be noted for possible citation purposes.
2. These inspections will embody a three-fold approach. First, efforts will be made to understand through documentary evidence, management interviews and verification by observation, the safety management systems in each facility. Second, interviews of employees (both of the facility and of the contractors) will be used to complete the evaluation of the systems. Third, a process safety evaluation (through operator and process engineer interviews, the review of piping and instrumentation diagrams, the review of safety valve sizing calculations, review of standard operating procedures for the unit, physical walk-through, etc.) of at least one process unit shall be conducted to verify that the systems are fully implemented.

**J. Inspection Resources.** Only trained compliance officers with experience in the chemical industry shall be assigned to conduct inspections under this PETROSEP.

1. All OSHA personnel participating in this PETROSEP must be familiar with the policies and procedures described in this notice.
2. If the establishments being inspected have contractors installing new process units, then CSHOs with construction industry experience may

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

the overburdened Area Office shall be considered. Enough of those establishment shall then be selected to remove the overburden and to cover every selected firm.

- c. If that fails to remove the overburden or overburdens another Area Office, the third largest establishment shall be considered, and so on, until a satisfactory list has been set.
  - d. If the resulting list contains a facility that is under the Voluntary Protection Program, that facility must be deleted by the Area Office from the inspection list and replaced by the procedure indicated in subparagraphs H.2. a, b, and c above.
  - e. The inspection list shall be grouped by Area Office and distributed to the Area Office through the Regional Administrator.
  - f. The resulting list shall be the inspection list for this PETROSEP.
- 3. Each affected Area Office shall conduct inspections at all the establishments provided on its list, prior to the expiration of this notice.
  - 4. Establishments on the Area Office lists can be inspected in any order of preference irrespective of their SIC codes and sizes.
  - 5. Programmed safety and health inspections of the establishments on the PETROSEP list shall have priority over any other programmed inspections.
  - 6. Unprogrammed inspections within the listed establishments may be limited to the items initiating the respective unprogrammed inspections or the Area Director may decide to initiate the PETROSEP inspection of these facilities at the same time as the unprogrammed inspection.

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

**effectively? Are there prompt resolution of detected hazards?**

6. Is there a system of communications that includes defined employee duties and responsibilities, clear lines of authority and responsibility (including contractor), process operation status transmitted to process personnel and contract workers, operator jargon understood by all plant, maintenance personnel and contract workers, and availability of all knowledgeable personnel on all shifts?
7. Are incidents (spills, leaks, fires) investigated and are corrective actions taken? If so, did they seem adequate? Examples? Are records made of incident investigations and subsequent corrective recommendations/actions? (If so, obtain a copy.) Are investigation records available to exposed employees and safety and health committee members?
8. Is there a workplace air monitoring program to detect any leaks of combustible, flammable, reactive or toxic materials? Scheduled frequent or continuous monitoring with alarms for these chemicals?
9. Are there scheduled shutdowns for comprehensive maintenance? Is maintenance preventive and programmed, or reactive to breakdowns? Is there a testing and calibration schedule for critical equipment? Is there any indication that previously installed pressure relief devices have been removed, plugged, or blinded? Are such indications sought? Are there permit systems for confined space, lock-out, line breaking, hot work? Are they enforced? How? (Obtain copies of permits system procedures, preventive maintenance procedures, etc.)
10. Is material compatibility, flammability, and reactivity considered in all aspects of design? If so, what design criteria are used? Are there written design protocols? Is there a nondestructive testing program? If so, what types of testing programs are used? And which

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

accompany the compliance officers assigned to conduct the PETROSEP inspection.

K. **Case File Documentation.** A written summary of answers to the following questions must appear in the case file. Any additional information, which bears on employee safety and health but is not addressed here, shall also be put in the case file. In addition, answers to the questions, where applicable, must be documented for contractors.

1. What is the safety and health history of the facility? Releases or spills of toxic chemicals? Any EPA reportable releases or spills? Previous or current inspection violations? Explosions or fires?
2. Are there comprehensive management safety and health systems including loss prevention, hazard evaluation, reactive materials, inspection and maintenance, repair, plant modification, training, and emergency response? Do they apply to contractors? Are they enforced? How?
3. Are there general plant controls in place to detect deficiencies in direct fired systems, fire prevention systems, atmospheric and low pressure tanks, pressure relief systems, material handling systems, inerting and purging systems, piping system, valves, cooling towers, control rooms, process sewers, and utilities?
4. Does the loss prevention program include safety and health self-audits? Frequency? Corporate, local, or contracted? What type of audit format is used? Is the last audit report available? (If so, obtain a copy.) Does the audit appear to have been completed? How well does the company track the complete correction of identified hazards?
5. Is there an active Labor/Management Safety and Health Committee? Who are the members? Are there regular and frequent meetings and walkthrough inspections? Are there minutes of these meetings? (If so, obtain a copy.) Does the committee appear to be functioning

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

15. Are there management controls to assure that the pressure vessels are designed, installed, and maintained in accordance with ASME or API code? Are these protected from over pressurization? If so, how?
16. Do the design criteria for instrumentation have fail-safe features built in? Are the instruments for process control periodically calibrated? Are there any processes which do not have redundant Instrumentation? If so, what precautions are taken to overcome hazardous conditions that may result due to an instrument failure?
17. Are there environmental controls (i.e., scrubbers, flares, incinerators, destruct systems, etc.) in place to prevent chemical releases? Are they designed to control a maximum release that may be anticipated? Are redundancies incorporated in these controls? What is the assurance that they are effective and maintained?
18. Are fire protection systems maintained in a state of readiness and capable of effectively supporting the firefighting needs of the facility? Are these fire protection systems away from the processes to be able to access and fight fires without endangering the safety and health of the fire fighters?
19. Are there management systems in place to assure the safety of specific operation units such as pumps, compressors, turbines, heat exchangers and heat transfer systems?
20. Does plant management utilize formal safety and health selection/measurement criteria in screening contract bids and contractors? What is the assurance of this? What protocol?
21. Are there utility systems that are critical to maintenance of safe operation (i.e., cooling water, electric, heating)? Do they have back-up systems provided for computer generated controls or other equipment which may be considered

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

equipment is tested? What are the limitations of the program and how complete or comprehensive is the testing program?

11. Are there other design considerations which include criteria for layout and spacing of the units, control of mechanical failures due to corrosion, erosion, fatigue, vibration, etc. Are there design considerations for reduction of hazards substituting less hazardous materials and minimizing hazardous process conditions?
12. Are the safety and health programs monitored and evaluated by, or is there access to, qualified safety and health professionals? Are these personnel educated, certified, licensed, and/or experienced? On site? Do most contractors have access to safety and health professionals?
13. Is there formal and periodic training conducted in operating procedures, process hazards, emergency programs, permit systems, release mitigation, PPE, and HAZCOM? Are there written Personal Protective Equipment (PPE) and respirator programs? Hands-on training and appropriate equipment available? Do contract workers receive this training? If so, how? Are contractors required to verify the safety and health training of their employees? Do they? What are the duties of the operating personnel during emergency situations? Are they provided with proper PPE? Are they trained to handle emergencies?
14. Are any processes operated near auto-ignition temperatures? If so, what precautions are taken? Are these lines purged and inerted before opening a line? Are there extremely high or low temperature/pressure reactions? Are there pressurized vessels which contain highly reactive chemicals? If so, what methods are used to keep the reactive materials stable? Are the large volumes of chemicals handled? What are the typical volumes of the chemicals handled at the facility?

## OSHA Notice CPL 2

### Directorate of Compliance Programs

then shall review corporate and facility safety management systems, procedures, and policies in greater details including, at a minimum, hot work permit procedures, line breaking permit procedures, fire brigade training procedures, lockout/tagout procedures, respiratory protection program, hazard communications program, management procedures with the outside contractors, and emergency response plans.

1. For evaluations of the company's safety and health management systems, CSHOs shall use the guidelines provided in Appendix A of this notice. These evaluations shall be documented based upon the following:
  - a. Physical evidence of conditions, equipment and processes observed during inspections;
  - b. Employee and management interviews; and
  - c. Management systems documents.
2. CSHOs may use the following guidance, as appropriate, during the physical inspection of the process unit selected for process safety evaluation:
  - a. OSHA Instruction CPL 2-2.45; and
  - b. OSHA Instruction PUB 8-1.5, as appropriate.

M. Selection of the Process Unit. After documentary review is well underway, a single process unit or line shall be selected for process safety evaluation. The purpose of this phase of the investigation is to ensure that written policies and programs are, in fact, being implemented. The process unit selection for the evaluation of the process safety hazards must be selected based on some or all of the following criteria:

1. Significant number of fires or explosions in the unit.

VVV 000013670

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

essential? Can safe procedures be overridden? Has any analytical evaluation of fail-safe been conducted (i.e., Fault Tree Analysis, HAZAN, FMEA, What-If, Checklist, HAZOP, etc.)?

22. Are there written emergency/evacuation procedures? Are they coordinated with local authorities? Are emergency control centers established? Are there re-entry and clean-up procedures?
23. Does the establishment test the process control valves at regular intervals? Does the company have a system to predict failure? Are valves replaced on a regular basis before they become defective? Are regular inspections made to detect and replace defective valves?
24. What is the CSHO's overall impression of the facility in regard to its potential for catastrophic accident? Included in factors contributing to this impression may be those such as:
  - a. Results of employee and management interviews.
  - b. Results of the information gathered using the questions in the preceding 23 paragraphs.
  - c. Company controls and safeguards for contract workers.
  - d. Evidence of equipment or structural corrosion.
  - e. General maintenance, clean and orderly plant conditions.

- L. Inspection Procedures. During the opening conference CSHOs shall familiarize themselves with the establishment's emergency response procedures and emergency alarms. After this familiarization, the inspection may begin with a very brief walkthrough inspection of the entire facility to give CSHOs a basic overview of the facility operations. CSHOs

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

different deficiencies are the causes of the violation including, but not limited to: deficient management programs, lack of engineering controls, lack of non-destructive testing, etc.

2. Citations proposed under the General Duty Clause shall be sent to the Directorate of Compliance Programs for review prior to their issuance.
  3. Each affected Regional Administrator shall also provide to the Directorate of Compliance Programs a written summary of the citations to be issued eight weeks prior to their issuance. The summary shall include standards to be cited, classification of citations, number of instances of each violation, and the amount of the penalty per violation to be proposed for each employer at the site.
0. **Evaluation.** Each Region shall develop a preliminary evaluation of the effectiveness of this program and submit it to the Directorate of Compliance Programs within 30 days of the expiration date of this notice.
1. The report shall include, at a minimum, the following items:
    - a. A description of the hazards that are found at the establishments.
    - b. The utility of the management systems evaluation guidelines used in Appendix A.
    - c. An assessment of the accuracy of targeting information.
    - d. An estimate of total resources (CSHO, Supervisory, Administrative and Legal) that were required to conduct each inspection.
  2. Final review of the overall effectiveness of the PETROSEP shall be determined by the Directorate of Policy.

VVV 000013672

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

2. Significant number of emergency shutdowns because of process upset conditions.
3. Advanced age of the process units.
4. Significant number of leaks including those reported to EPA. (One of the databases such as Toxic Chemical Release Inventory (TRI) database may be accessed to obtain information about the toxic chemical leaks.)
5. Highly hazardous nature of the chemicals involved in the process, such as toxicity, flammability, and reactivity of the chemicals.
6. Extensive OSHA injury and illness data, broken down by process area.
7. Large volumes of chemicals being processed at various units.
8. Problems listed in previous process safety reviews of the units.
9. The CSHO's judgment, as determined in section K.24. of this notice, and also based on the results of the evaluation of the safety and health program of the establishment using the guidelines provided in Appendix A of this notice.

N. Citation Issuance Policy. Citations shall be issued in accordance with the policies and procedures given in the FOM, Chapters IV and V.

1. When citations under the General Duty Clause (Section 5(a)(1) of the Occupational Safety and Health Act) are issued, only one 5(a)(1) citation shall be issued for each type of hazardous exposure to the employees of the establishment. For clarification, if the hazard is a fire and explosion that is likely to cause serious injuries, then all 5(a)(1) instances related to that hazard shall fall under one 5(a)(1) violation. This is true even when many

VVV 000013674

OSHA Notice CPL 2

Directorate of Compliance Programs

- P. Identifier Code. Inspections conducted under this PETROSEP (including contractor inspections) shall be identified by recording "PETRO" in item 25.d, of the OSHA-1 Form.

  
Gerard F. Scannell  
Assistant Secretary

DISTRIBUTION: National, Regional, and Area Offices  
All Compliance Officers  
State Designees  
NIOSH Regional Program Directors  
7(c)(1) Consultation Project Managers  
OSHA Training Institute

VVV 000013673

OSHA Notice CPL 2

Directorate of Compliance Programs

- b. Determining the adequacy of the employer's plans for protecting employees when an emergency situation exists.

B. The evidence evaluated during these inspections will be a combination of documentary and physical. This is especially appropriate for the evaluation of management programs and emergency plans where information will be gathered from plant management personnel and then verified through inspection of physical equipment and interviews with employees. While the evidence gathered during the inspections will be used to support violations of existing OSHA standards and/or Section 5(a)(1) violations according to the criteria established in OSHA Instruction CPL 2.45B, the FOM, the purpose of the inspection is not limited strictly to enforcement of standards. Letters of recommendation for potential hazards identified during the inspection should also be prepared and sent to the employer when citations cannot be supported.

II. CSHOs Tasks. The compliance officer(s) performing the inspection need to review four main areas in order to determine whether or not an adequate safety and health program has been implemented. To assist in this review, outlines have been included in this appendix. Compliance officers should use these outlines as an inspection aid to formulate appropriate questions to ask plant management and employees, and identify areas that require additional inspection attention. The outlines should not be considered all encompassing. If additional problem areas are discovered while undertaking this review, they should be investigated.

A. Management Commitment and Employee Participation. Management commitment provides the motivating force and the resources for organizing and controlling activities within the organization. In an effective program, management regards employee safety and health as a fundamental value of the organization and applies its commitment to safety and health protection with as much vigor as to other organizational purposes. Employee participation provides the means through which workers

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

**Appendix A**

**PETROCHEMICAL SAFETY AND HEALTH MANAGEMENT SYSTEMS  
EVALUATION GUIDELINES**

- I. Introduction. This appendix provides written guidelines for evaluating workplace management systems for the prevention of catastrophic releases, fires and explosions.
- A. Experience indicates that this type of evaluation is useful in identifying potentially hazardous conditions and that this approach is more appropriate than an ordinary inspection of merely physical conditions. Employee safety and health depends on comprehensive management and engineering systems, including such factors as written management philosophy and policy, hazard evaluation, design, construction, personnel training, operations, maintenance, management controls, operating control systems and emergency preparation.
1. These guidelines are divided into four major sections: management commitment and employee participation; workplace analysis; hazard prevention and control; and safety and health training. They should be used together in evaluating the whole network of protections available at the plant. Clearly, many protective measures can and should be considered both from the point of view of preventing incidents and minimizing hazards when an emergency occurs.
  2. The guidelines provided herein are general and are intended for use in a wide spectrum of workplaces. A great deal of professional judgment will be expected of CSHO's who apply these guidelines. They should not be used as an unvarying checklist against which to judge the employer's performance, but instead as a tool for:
    - a. Understanding the employer's approach to prevention of catastrophic emergencies.

OSHA Notice CPL 2

Directorate of Compliance Programs

MANAGEMENT COMMITMENT & EMPLOYEE PARTICIPATION

| <u>Elements</u>                                                                                                                                                                                | <u>Indicators</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <u>As evidenced by</u> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 1. Provide a clearly stated worksite policy on safe and healthful work so that all employees understand the priority of safety and health concerns in relation to other organizational values. | Written policy documents are in place and communicated to all employees including contract workers to assure compliance with regulations at company headquarters, process facilities and remote worksites.<br><br>Policy statements have been received from the CEO, company president, other top managers, and/or the facility manager.<br>(Attach copies)<br><br>Supervisors and employees including contractors and their staffs are aware of all policy statements.                                                                          |                        |
| 2. Establish and communicate a clear goal for the safety and health program and objectives for meeting that goal.                                                                              | Goals and objectives are written and communicated to employees at headquarters, process facilities, and remote worksites.<br><br>Goals and objectives are clear, feasible and measurable.<br><br>Goals and objectives are related to potential hazards and/or problems identified through an effective management evaluation of the worksite and working conditions.<br><br>Employee awareness of occupational safety and health is promoted through normal information channels such as meetings, posters, newsletters, etc. (Attach examples.) |                        |

**OSHA Notice CPL 2**

**Directorate of Compliance Programs**

develop and/or express their own commitment to safety and health protection, for themselves and for their fellow workers. The issues for evaluation include:

1. Organization structure of safety & health programs, staffing, and the background and training.
2. Accountability systems to assure compliance with worker safety and health requirements.
3. Written program documents and processes that are used by headquarters, plant facilities, and contractors to assure compliance with the OSHA regulations and other consensus standards.
4. Contractor oversight systems.
5. Effectiveness of the contractual relationship between facility management and contractor(s) as relates to the employee.

OSHA Notice CPL 2

Directorate of Compliance Programs

| <u>Elements</u>                                                                                                                                                                                     | <u>Indicators</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <u>As evidenced by</u> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
|                                                                                                                                                                                                     | Employees planning and presenting safety and health training, using the Safety Department as a resource.                                                                                                                                                                                                                                                                                                                                                                                                                                      |                        |
| 5. Assign and communicate responsibility for all aspects of the program so that all managers, supervisors and employees in all parts of the organization know what performance is expected of them. | Responsibility at all levels is clearly defined and authority assigned.<br><br>Written assignment of safety and health responsibility is found.<br><br>Interviews indicate a clear understanding of individual responsibilities.                                                                                                                                                                                                                                                                                                              |                        |
| 6. Provide adequate authority and resources to responsible parties.                                                                                                                                 | Staffing for implementation of the safety and health program is adequate. Staffing levels are reviewed and revised if needed, on a regular basis.<br><br>The responsible staff has the authority to carry out their assigned duties. The staff is well qualified and properly trained to perform inspections, reviews and perform program assessments.<br><br>Staff conducting safety and health evaluations are provided necessary testing and personal protective equipment. They are trained in the use and limitations of this equipment. |                        |

VVV 000013680

## OSHA Notice CPL 2

### Directorate of Compliance Programs

| <u>Elements</u>                                                                                                                          | <u>Indicators</u>                                                                                                                                                                                                                 | <u>As evidenced by</u> |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
|                                                                                                                                          | Provisions/programs are in place to ensure that contractors and contract workers are aware of safety and health policy, regulations and requirements.                                                                             |                        |
| 3. Provide visible top management involvement in implementing the safety and health program.                                             | Management demonstrates personal support for safety and health. For example, the facility manager participates in the program by accompanying inspectors, issues memos on safety and health issues, attends safety meetings, etc. |                        |
| 4. Provide for and encourage employee involvement in the operation of the program and the decisions that affect their safety and health. | The employer consults with employees and/or representatives concerning the development and implementation of the program.                                                                                                         |                        |
|                                                                                                                                          | Collective bargaining agreements include safety and health clauses for worker protection.                                                                                                                                         |                        |
|                                                                                                                                          | attends safety meetings, etc.                                                                                                                                                                                                     |                        |
|                                                                                                                                          | Employees trained in hazard recognition making or taking part in management inspections, identifying hazards and working out hazard correction needs.                                                                             |                        |
|                                                                                                                                          | Employees trained in accident investigations to ensure that all possible preventive actions are recommended to management.                                                                                                        |                        |
|                                                                                                                                          | Employees involved in the teams that do both job safety analyses and process hazard analyses and process hazard analyses to help restructure jobs and processes to prevent or control hazards.                                    |                        |

OSHA Notice CPL 2

Directorate of Compliance Programs

Elements

Indicators

As evidenced by

As appropriate, objectives are revised or new ones developed to ensure the effectiveness of the overall safety and health program.

Audit results are transmitted to top management officials and recommendations for improvement are tracked to completion.

VVV 000013682

## OSHA Notice CPL 2

### Directorate of Compliance Programs

| <u>Elements</u>                                                                                                                                                                                                    | <u>Indicators</u>                                                                                                                                                                        | <u>As evidenced by</u> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 7. Managers, supervisors and employees are accountable for meeting their assigned responsibilities.                                                                                                                | Adequate financial resources have been provided to implement the safety and health program and to satisfactorily correct hazards when identified.                                        |                        |
|                                                                                                                                                                                                                    | Formal accountability systems are adequate to ensure compliance with worker safety and health responsibilities by management supervision and employees.                                  |                        |
|                                                                                                                                                                                                                    | The contractual relationship between company management and all contractors holds the contractors responsible for providing contract workers with safe and healthful working conditions. |                        |
|                                                                                                                                                                                                                    | Specific performance tasks and clear measurements of performance relative to safety and health responsibilities are a critical part of managers' and supervisors' performance standards. |                        |
| 8. Review program operations at least annually to evaluate their success in meeting the goals and objectives of the overall program. Deficiencies are identified and the program, goals and/or objectives revised. | Performance in meeting safety and health responsibilities, by Managers, Supervisors and employees is evaluated, rewarded and/or corrected, as appropriate.                               |                        |
|                                                                                                                                                                                                                    | Comprehensive program audit is performed at least annually to determine if policies and procedures are implemented. A formal report of findings is prepared for management.              |                        |

OSHA Notice CPL 2

Directorate of Compliance Programs

WORKPLACE ANALYSIS--Worksite Examinations to Identify Existing and Potential Hazards

| <u>Elements</u>                                                                                                                                                                                                                                                                                          | <u>Indicators</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | <u>As evidenced by</u> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 1. All hazards and potential hazards are identified: employer conducts comprehensive baseline worksite surveys and periodic comprehensive safety and health update surveys; analyze planned and new facilities, changes in processes, materials, and equipment; and perform routine job hazard analysis. | <p>The baseline provides the basis for hazard prevention and control program, which involves frequent routine inspections.</p> <p>Reviews focus more intensive analysis in areas with the highest potential for hazards/accidents.</p> <p>Analysis of new facilities, routine process analyses, changes in processes, materials, and equipment takes place in the design stage or prior to use or implementation.</p> <p>Job hazard analyses result in the early recognition of new or potential hazards.</p> |                        |
| 2. Provide for regular site safety and health inspections.                                                                                                                                                                                                                                               | <p>There exists an operational safety and health inspection system which ensures that changes in conditions and activities do not create new hazards and that hazard control remains in place and effective.</p> <p>Periodic self-inspections are conducted by qualified person.</p> <p>Routine industrial hygiene monitoring and sampling are part inspection program.</p>                                                                                                                                   |                        |

VVV 000013684

OSHA Notice CPL 2

Directorate of Compliance Programs

**B. Workplace Analysis.**

1. Before the compliance officer can determine the adequacy of an employer's safety and health program, the degree to which company worksite evaluations/inspections identify existing or potential hazards and the efficiency of hazard abatement must be assessed.
2. It is important that this portion of the inspection include both review of implementing documents and reports, as well as verification of program operation and effectiveness. Verification will require interviews of personnel, spot checks of physical operations and review of the facility "self-evaluation" or inspection records.
3. It will not be possible to spot check all operations or verify safety and health program implementation at every process unit. Using professional judgement, the CSHO's should focus on potentially critical elements of a system or concentrate efforts in those areas where company evaluations have previously identified problems, accidents or mishaps, and the following issues:
  - a. Safety and health inspection systems, including the adequacy of resources, training, and management controls.
  - b. Enforcement of OSHA regulations, and an analysis of company procedures for ensuring compliance with those regulations by contractors and contract workers.
  - c. Procedures and policy for handling worker complaints, abatement of hazards and followup, and protection of whistleblowers.

OSHA Notice CPL 2

Directorate of Compliance Programs

Elements

Indicators

As evidenced by

The facility maintains current injury/illness records onsite (attach copy from last three years).

A summary of facility injury/illness experience is posted for 30 days beginning within 45 days of the close of the fiscal year.

A supplementary record of injuries and illnesses current to within six (6) working days of the recordable incident is maintained.

Injury/illness reports are compared to claims to verify accuracy. (Spot check through random review.)

Management staff reviews hazard reports and injury/illness records before conducting self-inspections.

OSHA-required codes are completed on compensation forms.

Comparison of changes in injury experience with changes in the safety and health program operations, personnel, and production processes is made to help identify causes, as appropriate.

VVV 000013686

OSHA Notice CPL 2

Directorate of Compliance Programs

| <u>Elements</u>                                                                                                                                                                       | <u>Indicators</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <u>As evidenced by</u> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 3. Provide reliable systems for employees to report hazard without fear of reprisal, to notify management of conditions that appear hazardous; encourage employees to use the system. | Procedures and policies for handling worker complaints and subsequent allegations of reprisal are developed and implemented.<br><br>Employees know how and to whom they are to report hazards, and receive appropriate and timely responses.<br><br>Employee complaints are used by management to further control hazards and improve the safety and health program.<br><br>Employees are aware that they are protected from reprisal or exercising their occupational safety and health rights. |                        |
| 4. Provide for investigations of accidents and near miss incidents, so that causes and means for preventing recurrences are identified.                                               | Investigation of accidents and near-miss incidents is conducted to identify their causes and to develop measures to prevent future injury or illness.<br><br>There is a regular review and analysis of records related to accidents, injuries, near-miss incidents and illnesses to discern trends, discover their causes and identify need corrective action(s).                                                                                                                                |                        |
| 5. Analyze injury and illness trends over time, so that patterns with common causes can be identified and prevented.                                                                  | An accurate record of injuries, illnesses, near-miss accidents is maintained.                                                                                                                                                                                                                                                                                                                                                                                                                    |                        |

OSHA Notice CPL 2

Directorate of Compliance Programs

HAZARD PREVENTION AND CONTROL

| <u>Elements</u>                                                                                                             | <u>Indicators</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <u>As evidenced by</u> |
|-----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 1. Established procedures to ensure that all existing and potential hazards are corrected or controlled in a timely manner. | Reasonable correction dates are established for all identified hazards.<br><br>Correction is consistently completed within specified time frames.<br><br>Interim protective measures are implemented, as appropriate.<br><br>Abatement plans are developed which include specific timetables and provision for monitoring abatement progress.<br><br>Procedures for safe work are understood and followed by all employees including contract workers; employee adherence to safe work procedures is promoted through training, positive reinforcement, correction of unsafe performance, and, if necessary, enforcement through clearly communicated disciplinary program. |                        |

VVV 000013688

OSHA Notice CPL 2

Directorate of Compliance Programs

- C. Hazard Prevention and Control. It is important to confirm that the policies for workers' safety and health protection are incorporated into and function within existing operational processes and procedures. The compliance officer must understand how policies are translated into work practices and controls to ensure safe process operation. This involves assessing the inter-relationships between policies for hazard prevention/abatement and operational/production procedures for a facility. The issues for evaluation include:
1. Procedures and policies for incorporating worker safety and health protection into existing and future facility design and engineering controls.
  2. Policies for abatement of hazards.
  3. Accountability systems intended to assure compliance with worker safety and health requirements.

VVV 000013687

OSHA Notice CPL 2

Directorate of Compliance Programs

| <u>Elements</u>                                                                                                      | <u>Indicators</u>                                                                                                          | <u>As evidenced by</u> |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------------------------|
|                                                                                                                      | The emergency plan includes procedures for emergency control, hazard containment, personnel evacuation, medical card, etc. |                        |
|                                                                                                                      | Supervisors and employees are familiar with the plan and procedures through instructing, discussion and practice drills.   |                        |
| 4. Establish a medical program with first aid on site and a physician and an emergency medical care facility nearby. | Emergency medial care is readily available to minimized the impact of injuries and illnesses that may occur.               |                        |
|                                                                                                                      | An ongoing program for monitoring employee exposure to harmful contaminants is implemented, where needed.                  |                        |

VVV 000013690

OSHA Notice CPL 2

Directorate of Compliance Programs

| <u>Elements</u>                                                                           | <u>Indicators</u>                                                                                                                                                                                   | <u>As evidenced by</u> |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
|                                                                                           | Engineering and administrative controls are implemented, as appropriate.                                                                                                                            |                        |
|                                                                                           | Personal protective equipment is available and in use as an interim protection measure.                                                                                                             |                        |
|                                                                                           | Supervisors enforce safety and health standards, rules regulations in the workplace.                                                                                                                |                        |
|                                                                                           | Procedures exist to ensure that private contractors do not expose employees to unsafe conditions, and include a means to report unsafe and/or unhealthful conditions to corporate management staff. |                        |
| 2. Provide a facility and maintenance program to avoid hazardous breakdowns.              | There is an effective and ongoing program for the monitoring, inspection, maintenance and repair of process equipment engineering controls and personal protective equipment.                       |                        |
|                                                                                           | The preventative maintenance program is designed to anticipate potential hazard and prevent their occurrence.                                                                                       |                        |
| 3. Provide a plan and prepare for emergencies, and conduct training and drills as needed. | Evidence of planning and training for emergencies to minimize the potential for harmful consequences in the event of a major incident.                                                              |                        |
|                                                                                           | Emergency information such as telephone numbers and exit routes are clearly posted for all to see.                                                                                                  |                        |

VVV 000013689

OSHA Notice CPL 2

Directorate of Compliance Programs

SAFETY AND HEALTH TRAINING

| <u>Element</u>                                                                                                                                                      | <u>Indicators</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <u>As evidenced by</u> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| 1. Supervisors carry out their safety and health responsibilities, and provide training to ensure understanding of these responsibilities and the reasons for them. | <p>An effective safety and health training program is in place.</p> <p>Supervisors understand and can explain policies, rules, procedures and safe work practices to employees and contractors.</p> <p>Supervisors understand their responsibilities to analyze the work under their jurisdiction for potential hazards associated with each job as well as for proper operating procedures and safe work practices necessary to perform each job safely.</p> <p>Supervisors are familiar with the existing engineering controls and the proper use of required personal protective equipment.</p> |                        |

VVV 000013692

OSHA Notice CPL 2

Directorate of Compliance Programs

- D. Safety and Health Training. Compliance officers will need to evaluate the effectiveness of safety and health training. The extent of training as measured by program coverage of managers, supervisors, and employees including contract workers is a key indicator. The amount, type and extent of refresher training, as well as, methods of measuring the training effectiveness is important to any such evaluation. As always, interviews to verify the operational effectiveness of the phase of the program will be necessary. The issues for evaluation include the adequacy of safety and health training and management controls.

VVV 000013691

OSHA Notice CPL 2

Directorate of Compliance Programs

Elements

Indicators

As evidenced by

Where personal protective equipment is required, employees know when, why and how to use it, including its limitations and maintenance procedures.

New employees including contract workers are trained before starting jobs.

Employees are authorized official time to participate in company sponsored safety and health programs, meetings and training.

VVV 000013694