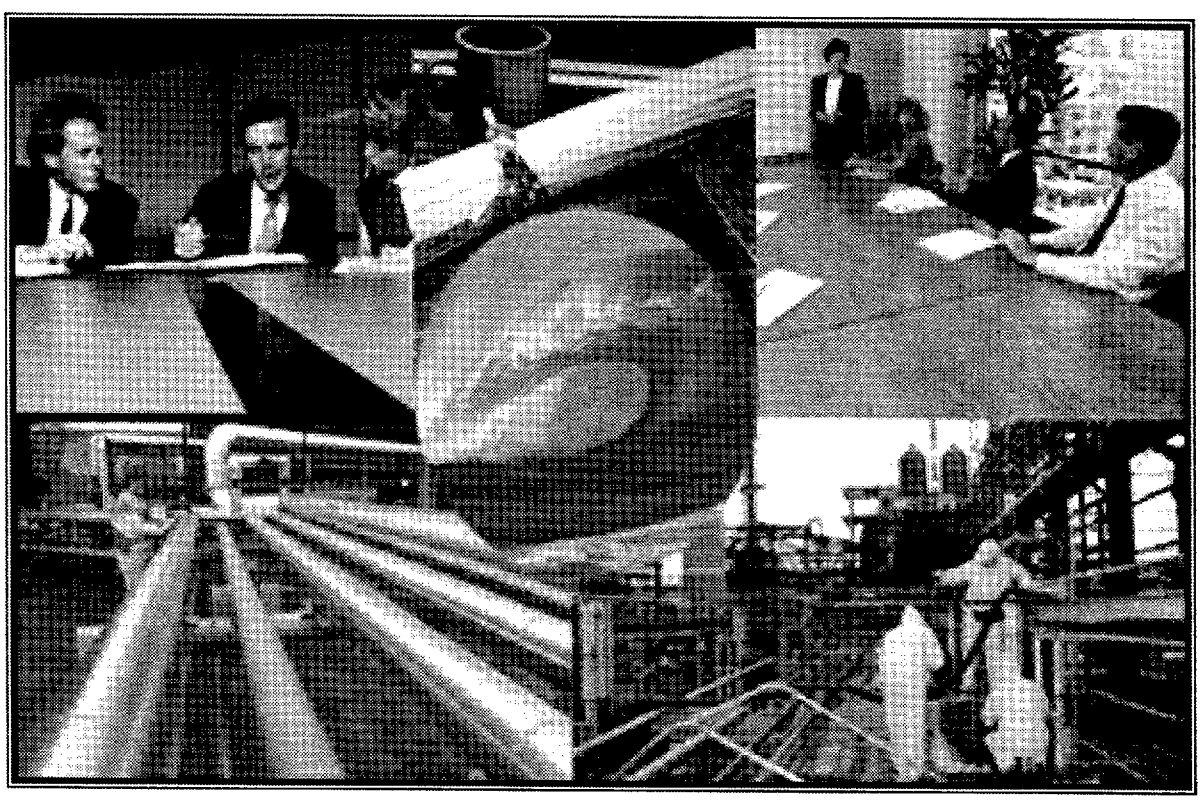
American Petroleum Institute

Model Environmental, Health & Safety (EHS) Management System

A Voluntary Tool for Companies Interested in Developing an EHS Management System or Enhancing an Existing System

API Publication 9100A
October 1998



STEP
Strategies for Today's Environmental Partnership

American Petroleum Institute

American Petroleum Institute Environmental, Health and Safety Mission and Guiding Principles

MISSION

The members of the American Petroleum Institute are dedicated to continuous efforts to improve the compatibility of our operations with the environment while economically developing energy resources and supplying high quality products and services to consumers. We recognize our responsibility to work with the public, the government, and others to develop and to use natural resources in an environmentally sound manner while protecting the health and safety of our employees and the public. To meet these responsibilities, API members pledge to manage our businesses according to the following principles using sound science to prioritize risks and to implement cost-effective management practices:

PRINCIPLES

- To recognize and to respond to community concerns about our raw materials, products and operations.
- To operate our plants and facilities, and to handle our raw materials and products in a manner that protects the environment, and the safety and health of our employees and the public.
- To make safety, health and environmental considerations a priority in our planning, and our development of new products and processes.
- To advise promptly, appropriate officials, employees, customers and the public of information on significant industry-related safety, health and environmental hazards, and to recommend protective measures.
- To counsel customers, transporters and others in the safe use, transportation and disposal of our raw materials, products and waste materials.
- To economically develop and produce natural resources and to conserve those resources by using energy efficiently.
- To extend knowledge by conducting or supporting research on the safety, health and environmental effects of our raw materials, products, processes and waste materials.
- To commit to reduce overall emission and waste generation.
- To work with others to resolve problems created by handling and disposal of hazardous substances from our operations.
- To participate with government and others in creating responsible laws, regulations and standards to safeguard the community, workplace and environment.
- To promote these principles and practices by sharing experiences and offering assistance to others who produce, handle, use, transport or dispose of similar raw materials, petroleum products and wastes.

Rev. November 1996

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If you would like more information on this publication, contact the API Policy Analysis and Statistics Department, STEP Office (202) 682-8468. A catalog of API publications and materials is published annually and updated quarterly by API, 1220 L Street, N.W., Washington, D.C. 20005.

API Publication 9100A, *Model Environmental, Health and Safety (EHS) Management System,* was developed as a voluntary tool or template to assist companies interested in developing an EHS management system or enhancing an existing system. The model, which applies a quality systems approach to managing EHS activities, focuses on people and procedures by pulling together company EHS policies, legal requirements, and business strategies into a set of company or facility expectations or requirements to achieve continual improvement in overall EHS performance consistent with company policies. It is intended to be flexible and adaptable to fit the size and complexity of a company's or facility's operations. Those who use this model should refer to the companion document, API Publ. 9100B, *Guidance Document for Model EHS Management System,* for additional information.

API Publication 9100B, *Guidance Document for Model EHS Management System,* provides assistance to corporate and operating organization employees who are developing, implementing and assessing environmental, health and safety management systems. The guidance document serves as self-study source material, explains the basic purpose and scope of management systems, enhances efficiency of interchange among employees by use of common terminology, clarifies relationships between operating and other systems, describes how to evaluate effectiveness of an EHS management system and its elements, and facilitates system continuity over time. Those who use this guidance document should be familiar with API Publ. 9100A, *Model Environmental, Health and Safety (EHS) Management System.*

API MODEL EHS MANAGEMENT SYSTEM

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API MODEL ENVIRONMENTAL, HEALTH & SAFETY (EHS) MANAGEMENT SYSTEM

1.0 GENERAL

An environmental, health and safety (EHS) management system is a process that applies a quality systems approach to managing EHS activities. This approach uses a cyclical process (i.e., plan, implement, assess and adjust) that takes experiences and learnings from one cycle and uses them to improve and adjust expectations during the next cycle. The system focuses on people and procedures by pulling together company EHS policies, legal requirements, and business strategies into a set of company or facility expectations or requirements to achieve continual improvement in overall EHS performance consistent with company EHS policies. Additionally, management systems should incorporate processes to identify and resolve root causes of non-compliance issues.

The Model EHS Management System (EHS MS) is a tool or template to help members, industry sectors, and others develop or enhance an EHS MS. However, it is not expected that this particular system necessarily be used. Companies may choose to organize their management systems differently depending upon other existing systems and/or procedures that are to be incorporated into their own management systems, or emphasis that company management may want placed on certain system elements. The Model EHS MS is intended to be flexible and adaptable by scaling up or down to fit the size and complexity of a company's or facility's operations.

1.1 PURPOSE AND OBJECTIVES

Potential benefits of EHS management systems include: reduced injuries, incidents, emissions, wastes, operating costs, and potential liability; as well as improved reliability, profitability, reputation and credibility. It is helpful to integrate EHS management with business management at the earliest possible stages of business planning and R&D efforts. This facilitates merging business objectives and EHS objectives. It focuses on the effectiveness and efficiency of the integrated process, as well as on the long-term benefits of improving EHS performance and stewardship.

The company defines expectations or requirements that specify what EHS management areas should be addressed. Operating units or facility employees decide how they will achieve these expectations; this does not mean that all employees undertake the same actions on the same schedule to achieve a particular expectation -- nor does it mean that all employees work on the same expectations during a particular cycle. To be successful, all employees should share a common understanding of this process.

The Model EHS Management System has been defined generally; each individual company may adapt this system as necessary to fit their own corporate visions, business strategies and values. A companion document has been prepared, entitled *Guidance Document for Model EHS Management System,* API Publication 9100B, for those companies seeking additional assistance for development and implementation of their EHS management system.

1.2 SCOPE

The scope of an EHS management system includes: defining and documenting expectations, objectives, and priorities; assigning, documenting, and communicating responsibilities, accountabilities and authorities; implementing and documenting procedures; assigning adequate resources; providing adequate training; measuring progress periodically; adjusting objectives and priorities appropriately; reviewing results with management; and communicating with interested parties.

Implementation activities include: identifying responsible leaders and owners of expectations, identifying gaps between facility procedures and expectations, prioritizing objectives, developing plans and targets, allocating resources, developing procedures, implementing plans, measuring results, self-assessing, adjusting EHS performance and management objectives in light of business objectives and identified gaps, and beginning the next cycle [see Figure 1]. During development of an EHS management system, companies with international operations should ensure that expectations are clear, concise, auditable and applicable to business operations and cultures in any country.

1.3 DEFINITIONS

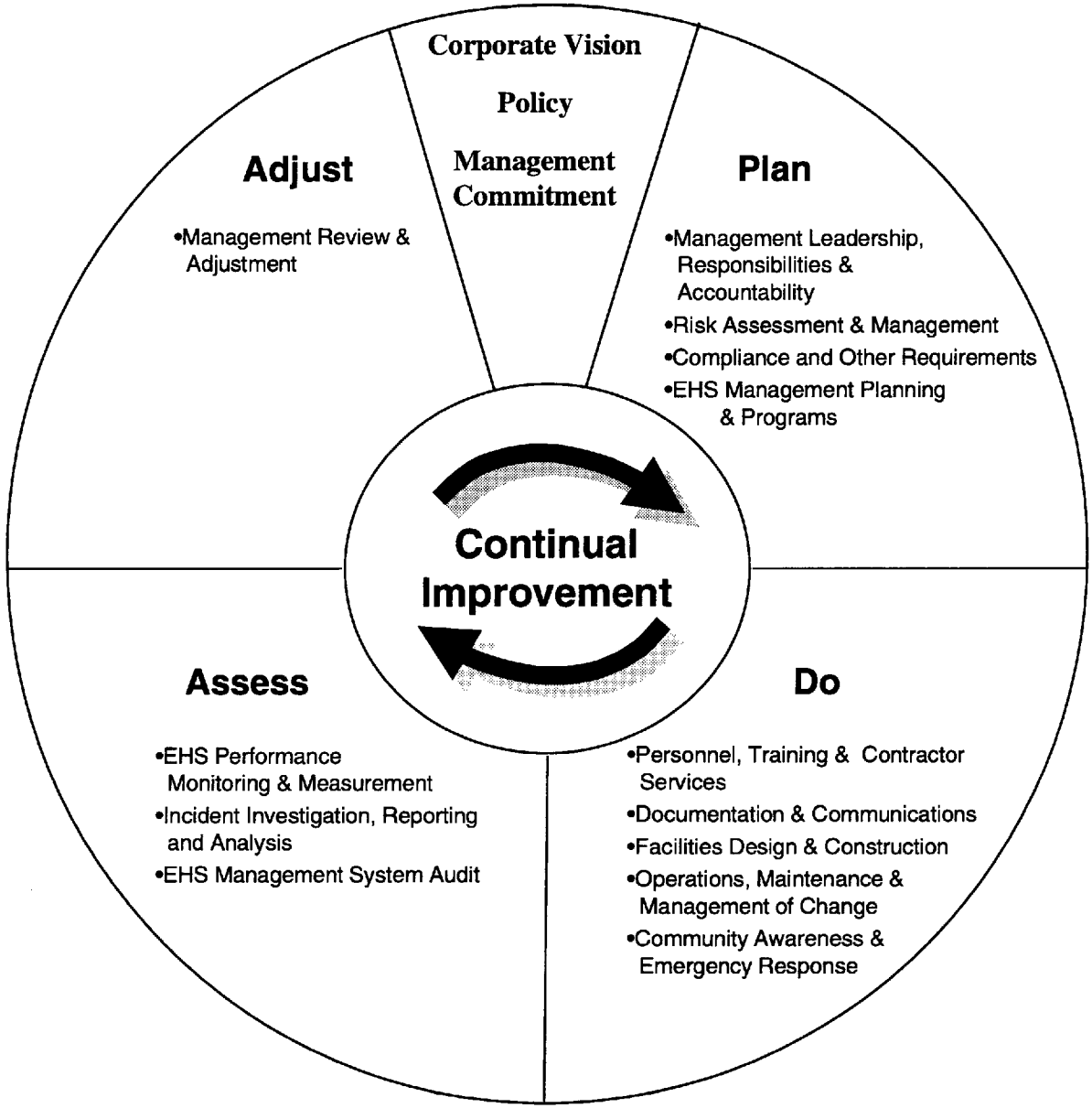
Definitions of key terms are provided below so that the management system can be applied and discussed in a consistent manner throughout organizations and among companies. This also prevents misapplication of terminology or definitions from other contexts, such as ISO 14001 or 14004, which may be different from terminology used in this EHS Management System. Additional terms are defined in the Glossary of the accompanying EHS Management System Guidance Document.

Continual Improvement:	The process of enhancing the management system to achieve improvements in overall EHS performance in line with the organization's EHS policy and performance objectives.
Contractor:	An individual, partnership, firm or corporation retained by the owner or operator to perform work or provide service, supplies or equipment.
EHS Management System (EHS MS):	A continual improvement process that applies a quality systems (i.e., plan, do, assess and adjust) approach to managing environmental health and safety activities.
EHS MS Assessment or Audit:	A process to assess the management system's effectiveness and quality, based on verification and measurement findings.
Element:	A key component of a safe, healthy, and environmentally sound operation. (The Model EHS Management System has 13 elements.)
Expectation:	A provision or requirement that specifies actions that should be undertaken to meet the

	management systems objectives. There are several expectations for each element of the EHS Management System.
Goals:	General directions or results sought through application of an organization's strategies, objectives and systems.
Management System or System:	A series of steps taken to ensure that stated objectives are achieved. A typical system includes consideration of four key characteristics: *agreed scope and objectives*; *documented procedures and responsible and accountable resources* for implementation and execution; *a verification or measurement process* to determine if results are being achieved; and a *feedback mechanism* to provide for continual improvement. These key characteristics provide a quality systems approach (i.e., plan, do, assess, and adjust).
Objective:	A desired endpoint that helps achieve compliance with the organization's policies, or otherwise improves performance.
Organization:	Generic term used to describe the entirety of a corporation or a company, division, operating unit, business unit, or other similar component of a corporation.
Policy:	A statement by the organization of its intentions and principles in relation to its overall EHS performance, which provides a framework for action and for setting EHS objectives and targets.
Practice:	Methods or means of accomplishing stated tasks.
Procedure:	A step or series of steps to be carried out in a logical order in a given situation.
Process:	A series of actions, changes or functions that bring about an end or result.
Program:	A plan of action that includes scheduled events or activities.
Quality:	Suitability of a system to its intended purpose and its conformance to specifications.
Targets:	Milestones that must be achieved, or actions completed, within a specified time to meet an objective.

Figure 1

API MODEL EHS MANAGEMENT SYSTEM



1.4 INDUSTRY CODES, PRACTICES AND STANDARDS

Numerous API recommended practices, standards and other materials that companies may find useful and applicable to EHS management are listed in Appendix A of the *Guidance Document for Model EHS Management System,* API Publication 9100B.

1.5 GOVERNMENT CODES, RULES AND REGULATIONS

A list of relevant EHS regulatory topics, which may need to be considered when developing and implementing an EHS management system, is provided in Appendix B of the *Guidance Document for Model EHS Management System.*

1.6 REFERENCES AND OTHER RESOURCES

A summary of useful references, which are applicable to EHS management systems, is provided in Appendix C of the *Guidance Document for Model EHS Management System.*

2.0 MANAGEMENT SYSTEM ELEMENTS

The API Model EHS Management System is organized around the following 13 elements:

- POLICY & PLANNING [*PLAN*]
  1. Management Leadership, Responsibilities & Accountability
  2. Risk Assessment & Management
  3. Compliance & Other Requirements
  4. EHS Management Planning & Programs

- IMPLEMENTATION & OPERATIONS [*DO*]
  5. Personnel, Training & Contractor Services
  6. Documentation & Communications
  7. Facilities Design & Construction
  8. Operations, Maintenance & Management of Change
  9. Community Awareness & Emergency Response

- MEASUREMENT & CHECKING [*ASSESS*]
  10. EHS Performance Monitoring & Measurement
  11. Incident Investigation, Reporting & Analysis
  12. EHS Management System Audit

- MANAGEMENT REVIEW & CONTINUAL IMPROVEMENT [*ADJUST*]
  13. Management Review & Adjustment

3.0 MANAGEMENT SYSTEM EXPECTATIONS

The following pages list the expectations for each element of the Model EHS Management System. Although these expectations are intended to cover the general attributes of an EHS management system, they can be reorganized to adapt the system to particular company policies, procedures, structures and operations. There is no presumption that all companies

have to use this exact system. Some companies may choose to reorganize the elements and expectations to coincide more closely with either existing company management systems (e.g., safety management system), or other environmental management systems (e.g., ISO 14001 and 14004).

Since the API Model EHS Management System is intended as a tool or template for companies or facilities developing an EHS MS, if they don't have one, or for enhancing an existing EHS MS, it is written in the present tense, rather than the conventional future tense used for standards or recommended practices.

3.1 MANAGEMENT LEADERSHIP, RESPONSIBILITIES & ACCOUNTABILITY

3.1.1 Policies on environmental, health and safety (EHS) performance improvement are established, communicated, promoted, periodically updated and supported at every level in the organization. Typically, policies are documented and maintained, and made available to the public; and include a commitment to prevent pollution and to comply with applicable laws and regulations.

3.1.2 Management demonstrates commitment through active and visible participation in the EHS Management System process, and by allocating sufficient resources.

3.1.3 The scope, priority, and pace for EHS Management System implementation are determined by operating management considering the complexity and risks involved in their operations and products.

3.1.4 EHS responsibilities, authorities, accountabilities, and competencies are clearly defined, documented, communicated and exercised at all levels.

3.1.5 Individual and team contributions to EHS performance are recognized and considered during the employee and unit performance appraisal process. One way to achieve improved EHS performance is to implement a compensation reward system for both management and employees.

3.1.6 A system is in place to encourage employee involvement and participation in the EHS Management System process and to encourage transfer of good EHS procedures, practices, programs, and technologies across the organization.

3.1.7 Clear goals, objectives, and targets are established for the EHS Management System; and individual, unit and business performance is evaluated against these goals, objectives, and targets. The system includes provisions for translating expectations into procedures and practices.

3.2 RISK ASSESSMENT & MANAGEMENT

3.2.1 A system is in place to identify hazards, assess consequences and probabilities, and evaluate prevention and mitigation measures for ongoing management of risk. Assessments of potential EHS impacts of products or processes are made as early as practical during research, development and planning.

3.2.2 Risk assessments are conducted periodically by qualified personnel for operations, projects, and products to identify and address potential hazards to the company and its businesses, personnel, facilities, customers, other direct product receivers, the public, and the environment. Assessments of emergency situations, including transportation accidents, and their potential impacts are periodically conducted.

3.2.3 A system is in place to assess and prioritize identified risks, manage them in a cost-effective manner, and document and communicate risk management decisions. Assessed risks are addressed by specified levels of management appropriate to the nature and magnitude of the risk, and decisions are clearly documented. A follow-up process exists to verify that decisions have been implemented.

3.2.4 Risk assessments are updated at specified intervals and as changes occur. A process is in place to verify that the design of new and modified facilities and procedures changes incorporate appropriate EHS protection measures (i.e., "Haz-Op" reviews).

3.2.5 Environmental, health and safety assessments are conducted as part of the acquisition or disposal of assets, and EHS hazards are managed as part of equipment or facility decommissioning.

3.2.6 A system exists to confirm that product safety information is appropriate, accurate and available.

3.3 COMPLIANCE AND OTHER REQUIREMENTS

3.3.1 A system is in place to ensure that all applicable EHS compliance requirements are known, and compliance is incorporated into relevant procedures and programs. Information on applicable laws and regulations, permits, codes, work place standards, procedures and practices is kept current, conflicts are resolved and resulting operating requirements are documented and communicated to those affected.

3.3.2 Procedures are in place to assess periodically compliance with all applicable laws, regulations, permits, and company requirements.

3.3.3 A process is in place for follow up on non-compliance incidents, including sharing any lessons learned among the company's various operations. Root-cause analysis may be used to identify underlying causes of non-compliance with feedback into planning and the continual improvement process to eliminate systemic-cause factors.

3.3.4 Opportunities are identified for participating in the development of new compliance requirements, where appropriate.

3.3.5 At appropriate organizational levels, emerging EHS compliance requirements are monitored, and impacts or benefits to company operations are identified.

3.3.6 A system is in place to communicate emerging EHS compliance requirements that may have significant impact on the operating units, or the company's regional or global business.

3.4 EHS MANAGEMENT PLANNING & PROGRAMS

3.4.1 A strategic planning process is in place to establish and maintain documented EHS objectives and targets, including time frames for achieving these, which are consistent with company EHS policies, at each relevant function and level within the organization. When establishing and reviewing objectives and targets, consideration is given to legal and other financial, operational and business requirements, significant EHS issues and effects, technological options, and the views of interested parties.

3.4.2 Programs and procedures, including time frames for achieving objectives and targets, are defined, established and maintained. Those responsible for achieving objectives and targets are designated at each relevant function and level of the organization. Procedures are reviewed periodically to assure they are consistent with current operations, activities and operating practices.

3.4.3 EHS management programs and procedures are amended as necessary to apply to new developments and projects; and new or modified activities, products or services; and newly recognized EHS impacts and concerns.

3.5 PERSONNEL, TRAINING & CONTRACTOR SERVICES

3.5.1 A system is in place for selection, placement, training, and ongoing assessment of the qualifications, abilities, and competencies of employees needed to meet specified job requirements, which are based on the organization's EHS job qualification criteria.

3.5.2 Initial, ongoing, and periodic refresher training is provided to meet EHS requirements and to ensure understanding of the proper protective measures to mitigate potential safety, health, and environmental hazards. This includes at a minimum: periodic assessment of employee knowledge and skills relative to requirements, training documentation, and assessment of training effectiveness.

3.5.3 A process is in place to verify that necessary levels of individual and collective experience, knowledge, and competencies are maintained and are carefully considered when personnel changes are made.

3.5.4 Procedures are in place for management of personnel safety and occupational health, which includes provisions for prevention and elimination of injuries, both on and off the job, and occupational illnesses. Personal protective equipment (PPE) requirements are identified and communicated to employees and contractors. Personnel are trained to make certain that PPE requirements are properly implemented and enforced.

3.5.5 Procedures are in place to assess, document, and provide feedback on employee performance in meeting compliance requirements, accountability standards, EHS performance improvement goals and EHS management improvement metrics. Employee EHS performance evaluations, as part of annual reviews or other reward systems may prove to be helpful in achieving continual EHS improvement.

3.5.6 Evaluation and selection procedures for contractor services include assessment of capabilities to perform work in a safe and environmentally sound manner, and in a manner consistent with the company's EHS management system.

3.5.7 Contractor performance requirements are defined and communicated, which include responsibility for providing personnel who are trained, qualified, and able to perform specified duties; and a process for self-monitoring.

3.5.8 A system is in place to verify effective management of the interface between organizations providing and receiving contractor services; and to verify that contractors manage EHS issues in a manner compatible with the company's EHS management system. The system includes procedures to periodically assess contractor performance, provide feedback, and confirm that deficiencies are corrected.

3.6 DOCUMENTATION & COMMUNICATIONS

3.6.1 Drawings and other pertinent documentation necessary for sound operation and maintenance of facilities are identified, accessible, and current.

3.6.2 Information on the potential hazards of materials involved in operations is kept current and, based on assessed risk to personnel, exposures are monitored, proper protective measures are communicated, and pertinent health data are recorded and reviewed.

3.6.3 Information on potential hazards associated with raw materials and products to enable proper handling, use, and disposal is documented and communicated.

3.6.4 Pertinent records covering operations, maintenance, inspections, and facility changes are maintained and protected against damage. Records should be legible, identifiable, and traceable to the activity involved.

3.6.5 Procedures are in place to identify, control and maintain records, including training records and the results of audits and reviews. Policies, procedures and guidance documents are reviewed at appropriate intervals and replaced and updated as required. Record retention times are established and recorded. Obsolete documents are promptly removed from all points of issue and use.

3.6.6 Procedures are in place to encourage free and open communications on EHS matters. For example, a "hot line" is maintained to enable employees to report suspected EHS violations and other concerns. Confidentiality is respected and reports are investigated and followed up.

3.7 FACILITIES DESIGN & CONSTRUCTION

3.7.1 Project management systems and procedures are documented, well understood, and executed by qualified personnel. EHS management personnel are involved at all stages of facilities planning and process design.

3.7.2 In the design and construction of new or modified facilities, approved design practices and standards are used that meet or exceed applicable regulatory requirements; or that embody company requirements where regulations do not exist.

3.7.3 Quality control and inspection systems are in place to verify that facilities meet design specifications and that construction is in accordance with the applicable standards.

3.7.4 Deviation from approved design practices and standards or the approved design is permitted only after review and approval by the designated authority, and the rationale for the decision is documented.

3.7.5 A pre-startup review is performed and documented to confirm that: construction is in accordance with specifications; safety, health, and environmental protection measures are in place; emergency, operations, and maintenance procedures are in place; risk management recommendations have been addressed and required actions taken; training of personnel has been accomplished; and regulatory and permit requirements are met.

3.7.6 Criteria and procedures are established for conducting and documenting safety, health, and environmental risk assessments at specified project stages to confirm that the organization's EHS and operating objectives are met.

3.8 OPERATIONS, MAINTENANCE & MANAGEMENT OF CHANGE

3.8.1 A system is in place for development and implementation of operating, maintenance, and inspection procedures; and to provide for updating at specified intervals and when changes are made. Operations with potentially higher risk are identified and addressed with special procedures (e.g., work permit activities that require two or more personnel to be present during certain activities, etc.).

3.8.2 EHS rules and a work permit system are in place, communicated, documented, and enforced, which incorporate checks and authorizations that are consistent with mechanical and operational risks. Operating procedures are up-to-date and available; interfaces between operations are assessed; and procedures are in place to manage identified hazards.

3.8.3 Critical alarm, control, and shutdown equipment is identified, tested, and undergoing preventive maintenance at defined intervals. A system exists that controls the temporary disarming or deactivation of critical alarm, control, and shutdown equipment.

3.8.4 A system is in place to track emissions and wastes; evaluate pollution prevention steps; control emissions and wastes consistent with policy, regulatory requirements, and business objectives; prevent spills and leaks; manage known instances of soil and groundwater contamination resulting from facility operations; and provide for long-term shutdown or abandonment of facilities.

3.8.5 Emissions and wastes generated at company facilities are evaluated in the design, operation and maintenance of facilities; and are managed to control their potential impacts on human health, the local environment, business operations and costs. Definitions of hazardous waste are established, and hazardous waste disposal is documented.

3.8.6 A system is in place for managing both temporary and permanent operational and facility changes, which addresses: authority for approval of changes; analysis of EHS implications; compliance with regulations and approved standards; acquisition of needed permits; documentation, including reason for change; documentation of potential consequences and required compensating measures; time limitations, including

procedures to verify that temporary changes do not exceed initial authorizations for scope or time without review and approval; communication to employees and contractors; and training.

3.8.7 EHS rules, procedures and practices are in place, communicated, documented and enforced for off-site, work-related activities, including vehicle operation. Facilities, vehicles, and equipment are maintained in a safe and operable condition, and appropriate safety equipment and hardware are provided, properly inspected and maintained.

3.9 COMMUNITY AWARENESS & EMERGENCY RESPONSE

3.9.1 A system is in place, appropriate to the size and nature of the operation, to recognize, document, and respond to community expectations and concerns about company and facility operations. Facility management establishes and maintains dialogue with the interested community and appropriate local EHS authorities, emergency response organizations or other interested parties. The facility communicates significant changes in operations to the community at the earliest reasonable time to mitigate the chances that changes become a source of concern.

3.9.2 An emergency response and crisis management system is in place for each facility, which includes plans that are documented, kept up-to-date, accessible, communicated and understood. The plans include: organizational structure, responsibilities and authorities; and procedures for: internal/external communications; accessing personnel; equipment resources; safety, health and environmental information; and interfacing with other company and community emergency response organizations.

3.9.3 Equipment, facilities, and trained personnel necessary to respond to emergency situations are defined, readily available, and periodically tested.

3.9.4 A program is established and implemented for providing simulations and drills, which includes consideration of external communications and involvement. Exercises are conducted to verify emergency response plan applicability and resource readiness. The roles, responsibilities and capabilities of company and government emergency response agencies are understood and incorporated into emergency response plans.

3.10 EHS PERFORMANCE MONITORING & MEASUREMENT

3.10.1 Management establishes and maintains a system to periodically monitor the key characteristics of facility and company operations and activities that can have significant EHS impacts on performance and stewardship. Procedures are documented and communicated for recording EHS performance indicators used to track EHS performance, relevant operational controls, and conformance with facility and company EHS objectives and targets.

3.10.2 Monitoring equipment is periodically calibrated and maintained, and records of these activities are retained according to company procedures.

3.10.3 EHS performance indicators for key characteristics of facility and company operations are measured, evaluated, and reviewed periodically; and results are communicated to appropriate corporate management.

3.11 INCIDENT INVESTIGATION, REPORTING AND ANALYSIS

3.11.1 A system is in place for reporting, investigating, analyzing, and documenting safety, health, environmental, and regulatory compliance incidents and significant near misses. An incident reporting process includes, at a minimum, the types of incidents to be reported, the level of management to be informed, and the time frame for reporting.

3.11.2 Procedures exist for near-misses and incidents that provide for timely investigation, identifying root causes and contributing factors, determining corrective or preventive actions needed to reduce the risk and recurrence of this and related incidents, confirming that, if needed, appropriate legal action is taken and documented, and reflect legal input.

3.11.3 Findings are retained, and periodically analyzed, to determine where improvements to practices, standards, procedures, or management systems are warranted; and are used as a basis for improvement.

3.11.4 A process exists to verify that corrective actions are implemented, documented and periodically assessed, and have been allocated sufficient resources to resolve them.

3.11.5 Lessons learned from incidents or near-misses are communicated among company operations and with others, as appropriate, to facilitate performance improvements.

3.12 EHS MANAGEMENT SYSTEM AUDIT

3.12.1 Employees are involved in the process of developing and implementing the EHS Management Systems, including a process to self-audit the adequacy and enforcement of the facility's EHS rules and procedures.

3.12.2 Procedures for EHS Management System audits are developed and implemented to determine whether or not the system conforms to planned company objectives and targets for EHS management, has been properly implemented and maintained, and has provided information on the results of EHS Management System audits to appropriate management. Audit procedures should include the audit scope, frequency, methodologies, auditor competencies, responsibilities, and requirements for conducting system audits and reporting results.

3.12.3 EHS Management System audits are conducted periodically by trained auditors based on the priority and risks of EHS activities and results of previous audits. Operations and management practices are assessed at pre-determined frequencies to establish the degree to which the expectations in the EHS Management System are met.

3.12.4 Frequency and scope of EHS Management System audits reflect the complexity of the operation, level of risk, and performance history.

3.12.5 EHS Management System audit findings are analyzed, addressed and documented in a timely manner to correct deficiencies and gaps in systems. Lessons learned are communicated among company operations and organizations.

3.12.6 EHS Management System audits are conducted by multi-disciplinary teams, including expertise from outside the immediate unit. Management review is performed by local and corporate management.

3.13 MANAGEMENT REVIEW & ADJUSTMENT

3.13.1 To achieve continual improvement, the organization's management periodically reviews and evaluates the effectiveness of the EHS management system. Reviews should include audit results, the extent to which objectives and targets were met, the quality of the system, and concerns among relevant interested parties.

3.13.2 Findings are documented and reported to appropriate management, and used to make improvements. For example, management reviews the need to make changes to EHS policy, objectives and other programs and practices to improve EHS performance.

3.13.3 A system is in place to ensure resolution of findings from EHS Management System assessments.

4.0 APPENDIXES

Refer to *Guidance Document* for *Model EHS Management System* for the following appendixes:

APPENDIX A - INDUSTRY CODES, PRACTICES AND STANDARDS

APPENDIX B - GOVERNMENT CODES, RULES AND REGULATIONS

APPENDIX C - REFERENCES AND OTHER RESOURCES

APPENDIX D - GAP ANALYSIS

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• Inspector Certification Programs	Ph: 202-682-8161 Fax: 202-962-4739
• American Petroleum Institute Quality Registrar	Ph: 202-962-4791 Fax: 202-682-8070
• Monogram Licensing Program	Ph: 202-962-4791 Fax: 202-682-8070
• Engine Oil Licensing and Certification System	Ph: 202-682-8233 Fax: 202-962-4739
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