



ChemStewards[®] Management System Manual

ChemStewards[®] Management System

Chapter 1 [CSMS Overview/Plan]

Developed by

**Society of Chemical
Manufacturers and Affiliates
(SOCMA)**



TABLE OF CONTENTS

[CSMS Overview/Plan]

ChemStewards [®] Management System [CSMS]	page 1
Policy	page 5
Hazards and Risk	page 8
Legal and Other EHS&S Requirements	page 14
Glossary of Terms and Acronyms	page 17
Example 2- Facility EHS&S Policy Procedure	page 20
Example 3- Hazards and Risk Assessment Procedure	page 22
Example 4- Identification of Legal and Other Requirements Procedure	page 25

ChemStewards® Management System [CSMS] Overview

The CSMS is a continual cycle of planning, implementing, reviewing and improving the strategic processes or actions that a facility takes to meet its obligations. The CSMS follows a Plan → Do → Check → Act cycle of continual improvement that aligns with each organization's strategic direction.

Every facility uses an integrated management system to run its business. Management systems can be informal or formal.

Informal Management System-

- The business is run by leveraging past practices.
- Relies upon historical knowledge attributed to individual long-term employees.
- Is challenging to review and improve undocumented processes.
- Presents significant business risks from informal systems. For example, risks include tacit knowledge loss as key personnel retire, carrying forward outdated or dangerous protocols, not filing a government report on time, or using an outdated or incomplete energy response procedure.

Formal Management System-

- All critical policies, procedures and tasks have been documented.
- Ability to train employees properly, assign reviews to existing policies, procedures, and work instructions and improve upon them.
- A written work instruction is easier to train on, follow and improve than an unwritten work instruction.
- Employees are more comfortable learning new information and tasks when given something to read and follow.
- Account for the organization's context and stakeholder expectations. Also account for product/service lifecycles.
- Top management is engaged and communications are strengthened.

The idea behind the CSMS is to have a facility take its management system (formal or informal) and structure it according to set principles. The CSMS gives an organization the latitude to incorporate its integrated approach to performing business and provides a management structure to ensure certain tasks are institutionalized. This helps to achieve better performance reliability, consistency, and quality, and is the basis for continual improvement.

Implementation Benefits of a CSMS

Member facilities implement a CSMS to effectively manage their operations. The idea of establishing a management system approach has evolved from several factors. They include:

- Management systems may be leveraged to establish clear objectives, metrics, and processes for continual improvement.
- Integrating environmental, health, safety, security, and quality goals with the organizations' broader business strategy facilitates long-term planning.
- By demonstrating a commitment to sustainability, safety and quality, industry is building trust with customers, regulators, investors, and employees.
- The need for the industry to demonstrate to stakeholders that it is meeting its EHS&S obligations through an independent third-party certification process.

Experience with management systems across many business sectors demonstrates that their application provides a systematic and consistent method for improving industry performance. Management systems are typically structured around a continual Plan-Do-Check-Act improvement model. The management system itself is a set of organized policies, procedures, work instructions, and practices that express a commitment around a core set of objectives and values.

Basic Framework [Elements] of the CSMS

Plan

- Policy
- Hazards and Risks
- Legal and Other EHS&S Related Requirements
- Objectives & Targets
- Action Plans
- Change Management

Do

- Responsibilities and Accountabilities
- Training, Awareness and Competency
- Communication
- Management System Documentation
- Operational Control
- Emergency Preparedness and Response

Check

- Monitoring and Measurement
- Non-conformance and Corrective/Preventative Action
- Records
- Internal Management System Audits

Act

- Policy and Commitment
- Leadership Engagement
- Management Systems Performance Monitoring

CSMS Business Value

Compliance Assurance

- Improved and sustained regulatory compliance due to focus on maintaining current understanding of legal, regulatory, and other requirements.
- Establishment of internal processes to monitor and measure compliance and to take corrective actions on problems identified.
- Supports environmental stewardship and lifecycle planning.

Return on Investment

- Encourages data-driven decision-making and continuous improvement.
- Enhances consistency and reduces errors or re-work.
- Business benefits including fewer injuries and more secure facilities and operations, and cost savings resulting from lower emissions and generation of less waste which require off-site disposal.
- Through implementing a management system, one company made a 25% permanent reduction in water usage while another member company reduced hazardous waste by 7,000 pounds per batch.

Risk and Liability Reduction

- Supports long-term planning through risk and opportunity management.
- Provides confidence to management that processes, methods, and practices are in place to assure compliance, and to identify and address EHS&S risks and liabilities.

Customer Expectations

- CSMS certification provides customers with the assurance that a company maintains reliable management systems.
- CSMS enables the development or improvement of reliable business and operating practices that can extend into the supply chain; further demonstrating that the customer's entire supply chain has systems in place to assure strong EHS&S performance and continual improvement.

Management & Implementation Team “Buy-In”

- Management’s commitment and leadership will come from the recognition of opportunities to make business improvements and gain tangible business value.
- For the CSMS to be effective, “senior management” must be committed to the process of management system design and facilitate internal and external communications.
- Encourage lifecycle thinking and sustainable innovations.

Policy

Essentials that may be considered in developing your CSMS EHS&S policy include, but are not limited to:

- Leadership commitment
- Integration of EHSS goals into the organization's strategic direction
- Integration and harmonization of management systems to promote consistency across business functions
- Compliance with legal requirements and industry standards
- Pollution prevention
- Providing a safe work place
- Stakeholder engagement
- Sustainable development
- Proactively manage risks and seize opportunities
- Continuous improvement in EHS&S performance, including areas not subject to regulations
- Transparent communication and active worker participation. Share information about EHS&S performance and the operation of your EHS&S MS with your stakeholders

This policy should serve as the foundation for your CSMS initiative and should be referenced when setting EHS&S objectives and targets.

Points to Consider When Developing Your Policy

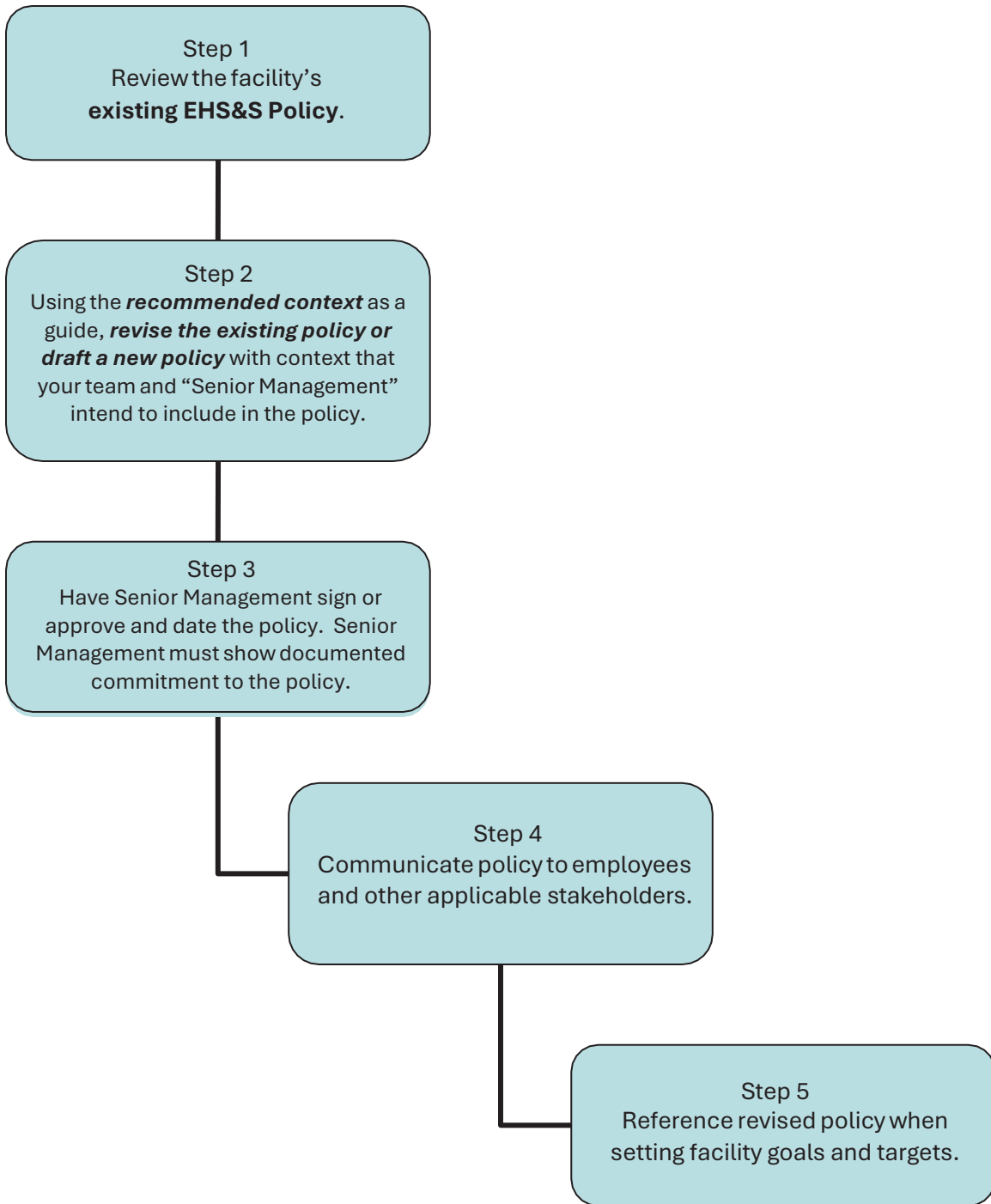
- Your facility probably has some form of EHS&S commitment now. For example, initiatives to ensure a safe work environment or goals to comply with the law and avoid environmental problems. Document your existing commitments and goals as a starting point.
- For many facilities, a CSMS Team will be appointed to draft an EHS&S policy at the start of the CSMS implementation process. This early draft may provide future objectives and targets.
- The EHS&S policy should be explicit enough to be audited. If you choose to use phrases such as "We are committed to excellence and leadership in protecting the environment," consider how to demonstrate this commitment. In addition, watch out for platitudes such as "we are the best company" or "we meet all regulations." What basis will you provide for these statements during an audit?
- Make sure senior management commits to the EHS&S policy statement. Senior management should sign and date it or show documented commitment to the policy if an electronic signature for approval is used.

- Make sure your employees receive and understand the policy. Options for communicating your policy internally include posting it around work sites, incorporating the policy into training classes and materials, and referring to the policy at staff or town hall meetings.
- The EHS&S policy should also be communicated externally as part of a broader stakeholder engagement strategy. Common channels include annual reports, company or facility websites, and other public-facing platforms. Organizations may choose to share the policy proactively or in response to external inquiries. This decision should align with the overall approach to external communications and reflect the organization's commitment to transparency and accountability.

Example 1: Context and Steps for Establishing the EHS&S Policy

- [Company Name] is committed to protecting the environment, the health, safety, and security of our employees, and minimizing the impact of our operations on the communities where we work.
- We are committed to full compliance with applicable federal, state, and local EHS&S regulations and our other related requirements, including voluntary commitments and stakeholder expectations.
- We are committed to continuous improvement in environmental, health, safety and security performance. This includes promoting conserving natural resources, pollution prevention, and advancing energy efficiency and recycling initiative.
- We value transparency and are committed to open communication with stakeholders.

[Facility can use the intent of the ChemStewards[®] Core Principles for the context of the Facility EHS&S Policy]



Hazards and Risks

This section defines methods that can be used to proactively identify EHS&S risks and consider opportunities. Identify potential hazards, environmental impacts, and operational vulnerabilities. Include both negative risks (e.g. pollution, accidents, non-compliance) and positive opportunities (e.g., innovation, efficiency gains). Plan for risk at every stage, including design and development, production and operations, distribution and use, and end-of-life.

Identifying hazards and evaluating risks is an essential part of the risk management process because it assures that health, safety, environmental, process safety, security and distribution risks are identified, evaluated and prioritized. Hazards and risk analysis is vital in considering objectives and targets, informing decision-making, and aligning stakeholder and compliance expectations.

This section addresses how to establish the following:

- Develop a hazard identification and risk evaluation program
- Keep the program current.

It requires a facility to have risk evaluation systems for raw materials, products, manufacturing processes, externally provided processes, products and services, and distribution-related issues. To identify hazards and evaluate related risks, it is necessary to understand how each is defined.

- A hazard is a condition that has the potential to cause harm (e.g., machinery, noise exposure to toxic substances), an environmental threat (e.g., excessive air emissions, water pollution, waste generation), operational hazards (e.g., equipment failure, process upsets, supply chain disruptions), or security concern (e.g., unauthorized access to restricted areas, theft or sabotage, ransomware).
- The risk associated with the hazard is the combination of the probability that the hazard will affect someone or something, and the consequences of that occurring. In the risk evaluation process, the first step is to identify the hazards that affect the operations.

Characteristics of Good Risk Management Include:

Systems to identify, assess and evaluate risk when applying risk-based thinking and lifecycle consideration:

- New products and processes
 - Material hazards
 - Environmental impact during production and use
 - Worker exposure
 - Regulatory compliance and labeling
 - End of life disposal or recycling risks

- Existing products
 - Aging infrastructure or equipment
 - Process safety risks such as pressure, temperature, emissions
 - Maintenance-related hazards
 - Changes in use or market conditions
- Storage
 - Fire and explosion
 - Chemical compatibility and segregation
 - Spill or leak potential
 - Security of hazardous materials
 - Temperature and humidity control
- Transportation and Logistics
 - Hazards during loading and unloading.
 - Vehicle safety and driver fatigue. Route specific risks.
 - Regulatory compliance.
 - emergency response
- Supply Chain and Externally Provided Processes, Products and Services
 - Transfer of technology and hazard/risk information
 - Off specification production
 - EHSS performance of suppliers
 - Disruption due to geopolitical or climate factors
- Security and Emergency Preparedness
 - Physical and cyber threats
 - Sabotage
 - Emergency response and evacuation
 - Business continuity and disaster Recovery
- Legal and Regulatory Compliance
 - Changes in laws or standards
 - Permit conditions and reporting obligations

- Liability and enforcement risks
- Corporate reputation

Methods of Hazard Identification

- Product Risk Assessments
- Management Of Change
- Process Hazard Analysis
- Pre-Startup Safety Reviews
- Transportation And Packaging Hazard Reviews
- Security Vulnerability Analysis
- Environmental Impact Analysis
- Reactives Matrix
- Supplier Review
- Audits

Product Hazards and Risks

Some facilities use a review and approval system to assess risk for either new or modified product in which different departments of the facility perform a review and provide input on risk potential in the assessment. The product risk assessment includes hazard determination, an assessment of use and the potential for exposure. Departments may include, but are not limited to sales, marketing, product stewardship, research and development, production operations, distribution/logistics, engineering and EHS&S.

Storage Hazards and Risks

A facility must identify hazards and evaluate the risks associated with the storage of raw materials and products. A good resource to use is the “Essential Practices for Managing Reactivity Hazards” that is available from CCPS, AIChE.

Tolling Hazards and Risks

Facilities that are involved in outsourced manufacturing operations [tolling] need to ensure that hazard identification and risk evaluation are performed and that responsibilities of individuals involved are clear. A good resource is “Process Safety in Outsourced Manufacturing Operations” that is available from CCPS, AIChE.

Distribution Hazards and Risks

A facility must evaluate the risks associated with different modes and routes of distribution including, but not limited to carriers, packaging, warehousing, terminals, distributors and shipping routes. In addition, see the Department of Transportation’s website (www.dot.gov) for subsequent information on how to approach distribution hazards and risks.

Process Hazards and Risks

One tool that can be used in identifying and assessing the facility process hazards and risks is the “process flow diagram”. The key with process flow diagrams, as well as with site diagrams, is to identify where environmental hazards occur, including but not limited to the following:

- Potential areas on the plant site for air emissions
- Solid wastes or wastewater generation locations
- Confined spaces
- Areas of potential trip and/or falls

Security Hazards and Risks

SOCMA members have access to the SOCMA Manual on Chemical Site Security Vulnerability Analysis Methodology and Model [SVA]. This tool contains guidance on how to identify security hazards, can be used to help facilities analyze potential vulnerabilities and consider where resources will be the most effective. If a facility is not voluntarily participating in the Department of Homeland Security’s ChemLock program or equivalent, then the SOCMA SVA is required.

Analyzing Risk

Once EHS&S hazards or vulnerabilities have been identified at the site, each must be evaluated to determine the level of risk they pose. Based on “risk criteria”, such as probability of occurrence and severity of consequence, the resulting risks can then be rated, ranked separately for each area (EHS&S) or integrated using either a numerical or a subjective scoring system.

Below are examples of two methods. Figure 2 presents a representation of an integrated approach and Table 1 shows an example of a numerical risk evaluation and rating matrix.

Figure 2: Integrated Analysis of Risks

(Identified Incident Scenarios Plus the Associated Contributing Hazards Indicate the System Risks)

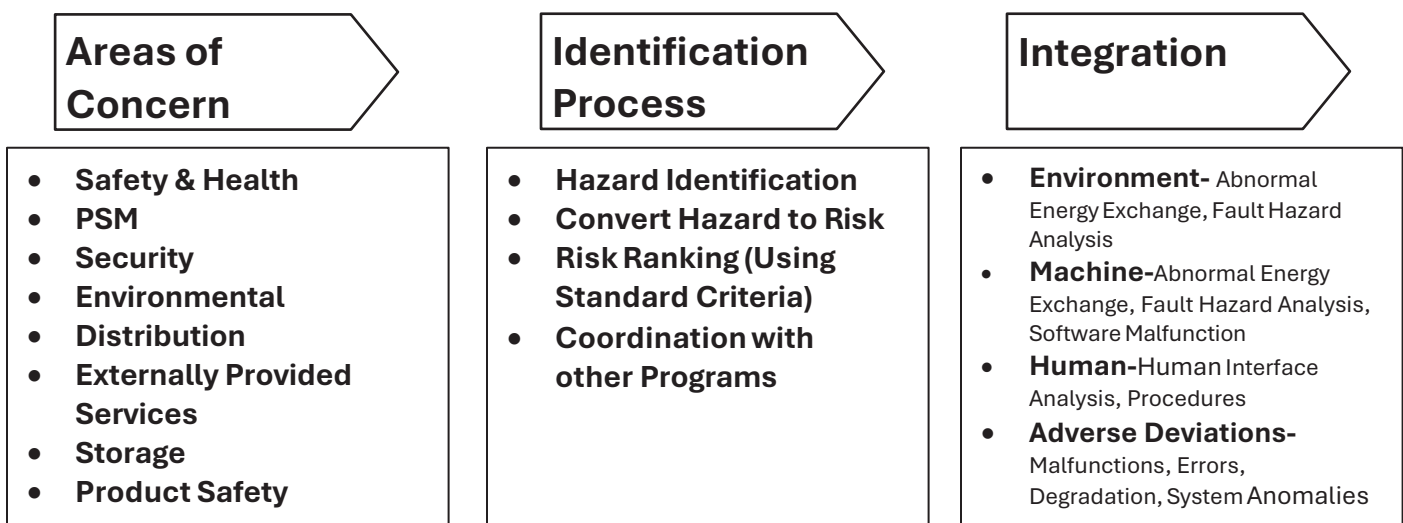


Table 1: Example of a Numerical Risk and Rating Matrix

Area or Activity	Hazard	Risk	Probability	Severity	Score
Chemical Reaction Vessel	Fugitive Emissions of VOCs (Environmental)	Air Pollution	4	3	12
Filling Petroleum Storage Tanks	Release Of Petroleum Due To Inadequate Containment At Fill Port (Environmental)	Soil and Groundwater Pollution	3	3	9
R&D Lab	Trip Hazard From Obstructed Walkway (Safety)	Worker Injury	4	3	12
Line Production in Benzene Unit	Poor Local Capture/Venting of VOCs In Work Area (Safety)	Worker Exposure To/Inhalation Of Dangerous Chemicals	5	3	15
Chlorine Storage Tank	Unauthorized Personnel Access Due To No Fencing (Security)	Severe Worker Or Community Injury If Released	1	5	5
Unloading Railroad Cars Containing Ammonia	Unauthorized Personnel Access From Lack Of Entry Restrictions (Security) Fugitive Emissions or Leaks (Environmental)	Chemical Contamination/Community Injuries From Release	2	4	8

Key: Probability

Ongoing (occurs continuously)	5
Occurs Frequently (daily)	4
Occasionally (weekly/monthly)	3
Rarely (yearly/has occurred once)	2
Unlikely (has not occurred/could only occur under very unusual conditions)	1

Severity

Catastrophic (severe impacts on and/or off-site)	5
Substantial (some impacts off-site and serious on-site impacts)	4
Significant (no off-site impacts)	3
Slight (some on-site impacts)	2
Insignificant (little impact)	1

Scoring

The probability score is multiplied by the severity score to obtain the risk score as depicted in the last column.

There are numerous other risk rating systems that may be used. There is no single correct method for assessment of hazards and risks. However, the method used by the facility needs to be systematic, rational, and understandable by the employees and other stakeholders.

Risk Control

Once the hazards are ranked in terms of their relative risk, decisions can be made as to significance of each hazard. Operational controls should then be accounted for and hazards reranked. The reranked hazards identified as having the greatest risk levels can be determined to be significant hazards. If a numerical ranking system is used, a numerical significance threshold value can be selected. This value may be adjusted based on judgment, instead of a precise calculation.

The relative hazards should then be used to establish objectives and targets for improvements. These can be turned into improvement (risk control) actions or programs.

Legal and Other EHS&S Requirements

A facility is required to be aware of applicable federal, state and local regulations and guidelines as well as other requirements to which the company subscribes (e.g., corporate requirements). This comprehensive understanding is essential to ensure full compliance and alignment with both legal obligations and internal standards.

This comprehensive awareness is essential for maintaining compliance, supporting risk-based decision-making, and demonstrating organizational accountability.

An effective CSMS will be integrated into facility operations and should include processes to:

1. Identify and communicate applicable legal and other EHS&S requirements.
2. Ensure that regulations and requirements are factored into the facility's management system efforts.
3. Maintain a current list of legal and other EHS&S requirements as they change over time.

Framework for Getting Started

The CSMS should include a procedure, system or practice for identifying, having access to, and analyzing applicable legal and other requirements. These requirements must include, but are not limited to the following:

Legal Requirements

- Federal, state, and local regulations
- Permits, licenses, and authorizations
- Consent agreements and enforcement actions
- International treaties or standards, where applicable

Other EHS&S Requirements

- Voluntary commitments (e.g., sustainability pledges, industry codes of practice)
- Corporate policies and internal standards
- Customer or supply chain requirements
- Community or stakeholder expectations

Lifecycle Integration

- Raw material sourcing
- Design and development
- Manufacturing and processing
- Storage and transport
- Use and maintenance
- End-of-life disposal or recycling

Note that lifecycle integration may not apply to all operations, such as tollers. A risk-based approach should be followed to assess lifecycle integration. Additionally, a management of change program may also be leveraged to qualify applicability to lifecycle integration. Also consider that a lifecycle integration assessment may be done as a system control and may not be necessary for each product made.

These requirements and the methods for complying with them must be communicated to employees, on-site contractors, and other stakeholders as applicable. The facility can use the communications procedure and plan in Module 3 to guide interaction to applicable stakeholders and site personnel. As with many CSMS elements, this is not a “one time” activity since legal and other requirements change over time. The procedure, practice or system used at the facility should ensure that the site is working with current information. Contact information for a number of resources is listed in Table 2.

Available Website References for Requirements:

- ISO9001:2000, ISO14001:2004: <http://www.iso.org/>.
- OHSAS18001: <http://www.osha.gov/>.
- EPA: [Laws & Regulations | US EPA](#)
- OSHA VPP: <http://www.osha.gov/dcsp/vpp>.
- American National Standards Institute: <http://webstore.ansi.org/>.

Table 2: Information Resources for Legal Requirements

Source	Description
EPA Website	Provides a variety of information on environmental regulations as well as tools for compliance guidance at www.epa.gov .
OSHA Website	Provides a variety of information on health and safety regulations as well as tools for compliance guidance at www.osha.gov .
OSHA’s Hotline (1-800-321-6742)	Questions regarding safety and health regulations may be directed to this hotline. The hotline answers factual questions about OSHA regulations and programs at the state or federal level.
EPA Asbestos and Small Business Ombudsman (1-800-368-5888)	Regulatory explanations, guidance, research, case studies, and contacts for additional information. Variety of hotlines available for particular statutes (such as RCRA). Also available online at www.epa.gov/sbo .
Small Business Assistance Programs (various states) and Other State Agencies	Guidance on regulations and compliance issues. Initially these focused on Clean Air Act requirements, but they are expanding into other environmental media.
U.S. Small Business Administration	Various services available to small businesses in the U.S. at www.sba.gov .
OSHA Small Business Assistance (1-202-693-2213)	OSHA assistance targeted to small business. Can also be accessed through www.osha.gov .
Trade and Professional Associations	A variety of services related to environmental laws and regulations, regulatory updates, training and ChemStewards reporting may be found at SOCMA’s website www.socma.org .
Chemical Safety Board Website	The U.S. Chemical Safety Board (CSB) is an independent, nonregulatory federal agency that investigates the root causes of major chemical incidents. Our public safety mission is to drive chemical safety excellence through independent investigations to protect communities, workers, and the environment. The agency was created under the Clean Air Act Amendments of 1990. U.S. Chemical Safety and Hazard Investigation Board CSB
Trinity Consultants	News articles that can be filtered by topic, industry, state, or tag. News Trinity Consultants

The facility can compose a list of site applicable regulations to aid in compliance and reporting “triggers”. Table 3 present a list of federal regulations which are applicable to most manufacturing facilities in the U.S.A.

Table 3: Federal Laws & Regulations Applicable to Manufacturing in the U.S.A.

Federal EHS&S Regulations	Overview of the Requirements
<p>Clean Air Act (CAA) [40 CFR Parts 50-99]</p> <ul style="list-style-type: none"> • Title V air permits and/or follow the regulations for hazardous air pollutants • State air permits 	<p>Establishes ambient, source emission standards, and permit requirements for conventional and hazardous air pollutants.</p>
<p>Clean Water Act (CWA) [40 CFR Parts 100-145, 220-232, 410-471]</p>	<p>Establishes ambient and point source effluent standards and permit requirements for water pollutants, including sources that discharge directly to a water body or to a public sewer system. Also includes storm water management requirements.</p>
<p>Resource Conservation and Recovery Act (RCRA) [40 CFR Parts 240-299]</p>	<p>Establishes regulations and permit requirements for hazardous waste management. Also creates standards for underground storage tanks that hold petroleum or hazardous substances.</p>
<p>Toxic Substances Control Act (TSCA) [40 CFR Parts 700-799]</p>	<p>Regulates the use, development, manufacture, distribution, and disposal of chemicals. Certain chemicals (such as polychlorinated biphenyls [PCBs]) are subject to specific management standards.</p>
<p>Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, also known as “Superfund”) [40 CFR Parts 300-311]</p>	<p>Establishes a program for cleaning up contaminated waste sites and establishes liability for clean-up costs. Also provides reporting requirements for releases of hazardous substances.</p>
<p>Emergency Planning and Community Right-To-Know Act (EPCRA-SARA 311-313) [40 CFR Parts 350-374]</p>	<p>Establishes a number of reporting requirements for facilities storing, using, processing, manufacturing, importing, or releasing certain types of chemical substances. The most complex of these requirements is the “Toxic Release Inventory,” in which facilities must inform the public about releases of toxic chemicals. Reporting requirements apply to companies that use, process, manufacture or import specific toxic chemicals over specified quantities.</p>
<p>Hazardous Materials Transportation Act (HMTA) [49 CFR Parts 100-180]</p>	<p>Establishes standards for the safe transportation of hazardous materials.</p>
<p>Occupational Safety and Health Act (OSHA) [29 CFR Part 1910]</p>	<p>Establishes regulations for employee health and safety.</p>
<p>Process Safety Management [29 CFR Part 1910.119]</p>	<p>Establishes regulations for management of highly hazardous chemicals in the workplace.</p>

In addition to identifying and listing key regulations that are applicable to the site, it is advisable to prepare a complete list of permits, permit conditions, and due dates for regulatory reporting applicable to the site (e.g., air pollution control permits, hazardous waste generator status, wastewater discharge permits).

The facility is required to have a system or practice to ensure compliance to permits and applicable regulations. Table 4 offers an example of a monthly compliance calendar indicating required training, plan updates, inspections, and required posting dates. An example of an environmental regulation inventory matrix is presented in Table 5.

Table 4: Example of a “Legal Requirements Calendar” per Month

Sun	Mon	Tue	Wed	Thu	Fri	Sat
				1 Post OSHA Log	2 Inspect Hazardous Waste Accumulation Area.*	3
4	5 Update Air Pollution Malfunction Abatement Plan	6	7 Annual Training for Hazardous Waste and Emergency Response Planning	8	9 Inspect Hazardous Waste Accumulation Area.	10
11	12	13	14 Hazard Communication Training	15	16 Inspect Hazardous Waste Accumulation Area.	17
18	19	20 Document Pressure Drop for Baghouse**	21	22	23 Inspect Hazardous Waste Accumulation Area.	24
25	26 Review and Update SPCC Plan***	27	28 Start Data Gathering for Form R Reporting	29	30 Inspect Hazardous Waste Accumulation Area.	

* Use Form XX to conduct inspection, even if no waste is present. If unable to conduct on Friday, find an alternative resource to complete the required inspection or conduct it another day this week.

**Use Form YY to record readings.

***Document review in the SPCC Plan’s change log.

Table 5: Example of Environmental Regulations Inventory Matrix
[Chemical Company ABC– All Facilities]

Plant	Applicable Regulations					
	Regulation Name	Enforcement Agency	Media	Regulatory Reference	Regulation Overview	Applicability/Exemptions
All Plants	Toxic Substances Control Act (TSCA) Inventory Update Reporting (IUR)	EPA	Chemical	40 CFR 710.23	Facilities that manufacture or import reportable chemical substances listed in the TSCA Chemical Substance Inventory.	Applies to facilities that manufacture or import reportable chemical substances in excess of 10,000 lbs at a single facility during the reporting year.
Plant 1	State Synthetic Resin Manufacturing RACT Rule	State Regulatory Agency	Air	WAC NR 421.05	Equip tanks with an emission control system, monitor valves, pumps and other applicable equipment in contact with streams >= 10% VOC, repair all leaks, document repairs.	Synthetic resin mfg. facilities located in certain WI counties with max. The critical VOC emissions exceeding 25 or 100 tpy (depending on the county).
Plant 1	Malfunction, Prevention and Abatement Plan	State Regulatory Agency	Air	WAC NR 439.11	Preparation of a Malfunction Prevention and Abatement Plan to prevent, detect and correct malfunctions or equipment failures that may cause violation of an emission limit.	Source that may emit hazardous substances or emits >15lbs/day or >3 lbs/hr of any contaminant for which emission limits have been adopted.
Plant 1	Combined Annual Air Emission Inventory and Hazardous Waste Report	State Regulatory Agency	Air	WAC NR 438.03	Submit annual emission inventory summarizing annual emissions of criteria pollutants. Report also includes annual hazardous waste report.	Facilities emitting criteria pollutants above levels listed in 438.03 Table 1 and/or RCRA LQGs
Plant 1	Operating Permit Application Shield	State Regulatory Agency	Air	WAC NR 144.3925	Protects facilities from enforcement action for not having a permit while waiting for permit issuance.	Part 70 sources that submit a timely and complete application.
Plant 1	Oil Pollution Prevention Act: Spill Prevention Control and Countermeasure	EPA	Chemical	40 CFR 112	Requires preparation and implementation of a Spill Prevention Control and Countermeasure Plan for preventing and responding to releases of oils	Applies to facilities with >42,000 gal in USTs, >1,320 gal in ASTs or >660 in a single AST. Applies to petroleum and other (e.g., edible) types of oils.
Plant 1	EPCRA 311/312	State Regulatory Agency	Chemical	EPCRA 311/312	Report hazardous chemicals stored to LEPC, SERC and local fire dept.	Facilities that store >10,000 lbs of hazardous material (or lesser of 500 lbs/TPQ of an EHS).
Plant 1	EPCRA 313	EPA	Chemical	EPCRA 313	Reporting on total facility releases. Toxic Release Inventory [TRI]	25,000 lbs mfg or processed or 10,000 lbs otherwise used of a 313 chemical.
Plant 1	Environmental Fee Statement	State Regulatory Agency	Air	WAC NR 410.04	Annual fee for air emissions. Amount billed is based on actual emissions of each regulated pollutant.	
Plant 1	RCRA Standards Applicable to Generators of Hazardous Waste	State Regulatory Agency	Waste	40 CFR Parts 262, 265 Subparts C, D, I & J	Requirements for generators of hazardous waste including manifesting, inspection, recordkeeping, reporting.	Generators of <2,200 lbs/month may accumulate wastes on site for <180 or <270 days (depending on TSDF location) and are exempt from preparing a biennial report.
Plant 1	RCRA Subpart CC	State Regulatory Agency	Waste	40 CFR 264.1050	Air emissions standards for hazardous waste tanks and containers.	LQGs and TSDs. Tanks/containers storing hazardous wastes. Exempt: containers <26.4 gal, VOCs <500 ppmw.
Plant 1	RCRA Subpart BB	State Regulatory Agency	Waste	40 CFR 264.1080	Air emission standards for piping/equipment associated with hazardous waste tanks.	Process equipment in contact with hazardous wastes. Exempt: equipment in contact with waste <300 hrs/yr.

Glossary of Terms & Acronyms

Each industry creates and uses its own “language” to communicate commonly used terms and concepts. The following is a list of commonly used management system terms used in the module. Acronyms are shown in parenthesis next to the term followed by the definition.

Audit: A systematic, independent, and documented process of obtaining evidence and evaluating it objectively to determine the extent to which criteria are fulfilled.

ChemStewards Management System (CSMS): A continuous improvement cycle that builds upon planning, implementing, reviewing and improving the actions that an organization takes to meet its EHS&S obligations.

CSMS Policy/Procedure: A written facility statement that summarizes the organization’s direction for achieving CSMS goals; intentions and principles in relation to its overall EHS&S performance, which provides a framework for action and a backup for its EHS&S objectives and targets.

Context of the Organization: Internal and external factors that influence an organization’s ability to achieve its intended outcomes. Includes legal, technological, competitive, cultural, and social environments.

Documented Information: Information required to be controlled and maintained by the organization, including policies, procedures, manuals, and records.

Key Performance Indicator (KPI): A measurable value that demonstrates how effectively an organization is achieving key objectives.

Management of Change (MOC): A systematic process to evaluate, document, and control changes that could impact safety, compliance, or performance. It is especially critical in industries dealing with hazardous materials, equipment, or regulated environments.

Management Review: Periodic review of the CSMS to ensure effectiveness and continuous improvement.

Management System (MS): An organized set of interrelated policies, procedures and practices designed and developed by an organization to support specific operational goals.

Non-Conformance: Operations, activities, practices, processes, products and incidents that do not conform with specified requirements.

Objective: Overall EHS&S goals that an organization sets to achieve, and which is quantified where practicable.

Operational Control: Procedures or limits that define operational parameters of a facility [e.g., permit limits, regulatory constraints, design parameters of equipment, calibration specifications, specific work instructions, etc]. The identification, planning and management of operations or activities in line with the CSMS policy, objectives and targets.

Other EHS&S Requirements: Requirements that an organization has committed to

following, other than legal requirements.

Plan-Do-Check-Act (PDCA): A four-step process or cycle for improvement. In the first step (plan), a plan to achieve improvement is developed. In the second step (do), the plan is carried out. In the third step (check), the effects of the plan are observed. In the last step (act), the results are studied to determine what was learned and what can be done to improve them.

Process Safety Management (PSM): OSHA regulatory standard containing requirements for the management of hazards associated with processes using highly hazardous chemicals.

Risk: Combination of the likelihood and consequences of a specified hazardous event occurring.

Risk Assessment: A step in the risk management process that measures two quantities of the hazard, the magnitude of the potential loss [severity], and the probability that the loss will occur, thus allowing a determination of whether the risk is acceptable.

Risk-Based Thinking: A proactive approach to identifying and managing risks and opportunities that could impact the achievement of objectives.

Risk Control: Actions taken or programs developed to improve areas of the management system so that hazards are lowered/controlled to an acceptable level.

Senior Management: Person or group of people who directs and controls an organization at the highest level. This group has the authority and accountability for setting strategic direction and ensuring the management system achieves its intended outcomes.

Stakeholder: An individual or group that has an interest in any decision or activity of an organization.

Interested Parties - Individuals or organizations that can affect, be affected by, or perceive themselves to be affected by the organization's quality management system.

Internal stakeholder – Employees, shareholders, investors and insurers.

External stakeholder – Neighbors, community organizations, customers, suppliers, trading partners, non-governmental organizations, local media or the general public.

Target: Detailed performance requirement that is quantified, measurable and verifiable, applicable to the organization or parts within the organization, arises from the objectives and needs to be met in order to achieve the objectives.

Example 2: Facility EHS&S Policy

Company Logo Company Name	Page _ of _
Subject: ENVIRONMENTAL, HEALTH, SAFETY AND SECURITY POLICY	Procedure #

APPLICATION

This policy applies to all employees, contractors, and visitors at the [Company] [Location] facility and extends to operations, products, and services that may impact environmental, health, safety, or sustainability performance.

PURPOSE

To define and communicate [Company]’s commitment to Environmental, Health, Safety, and Sustainability (EHSS) performance in alignment with [ISO 14001, ISO 45001, RC14001, etc.] and other applicable standards. This policy ensures visibility, leadership accountability, and stakeholder awareness.

PROCEDURE

- 1.0 The EHS&S policy shall be defined by the [company] president and must take into account the nature, scale, risks and impacts of its operations, products, or processes.
 - 1.1 The EHS&S policy shall be publicly posted and shall be communicated to all employees, visitors and contractors.
 - 1.2 The EHS&S policy will be reviewed at least annually as part of the EHS&S management review or upon significant organizational or regulatory changes and revised, if necessary.
 - 1.3 Changes shall be managed through the [Management of Change (MoC)] process to ensure continued relevance and effectiveness.

2.0 Statement of the Policy

[Company] is committed to:

- 2.1 **Protecting the environment**, preventing pollution, and minimizing our ecological footprint.
- 2.2 **Ensuring the health, safety, and well-being** of our employees, contractors, and the communities in which we operate.
- 2.3 **Complying with all applicable legal and other requirements**, including federal, state, local, and industry-specific EHSS obligations.

- 2.4 **Promoting continual improvement** through measurable objectives, audits, and performance reviews.
 - 2.5 **Integrating EHSS into business planning and decision-making**, including risk-based thinking and lifecycle perspectives.
 - 2.6 **Engaging stakeholders** through transparent communication and collaboration.
 - 2.7 **Providing training and resources** to empower employees to contribute to EHSS goals.
- 3.0 Responsibilities
- 3.1 The president or senior management at the site will approve and take responsibility for the execution of this policy, ensure alignment with strategic direction, and demonstrates visible leadership.
 - 3.2 The management staff will be responsible for effective implementation of the policy and EHS&S management system.
 - 3.3 EHS&S manager will ensure that all new hires are trained on the policy.
 - 3.4 Department Managers will integrate EHS&S policy into operations and ensure compliance within their areas.
 - 3.5 Human Resources shall be responsible for posting the latest policy in the plant lobby.
 - 3.6 All Employees are expected to understand and apply this EHS&S policy in daily work activities.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	[President/Senior Management for Facility]

Example 3: Hazards and Risk Assessment Procedure

Company Logo: Company Name: Subject: HAZARD AND RISK ASSESSMENT PROCEDURE	Page _ of _ Procedure #
--	--

APPLICATION

This procedure applies to employees of [company] at the [location] facility.

PURPOSE

This procedure addresses the ongoing identification of hazards and the evaluation of risks that can or do have impact on the environmental, health and safety, and security conditions at the facility, in the areas of operations, in the procurement of goods, and the services of others.

DEFINITIONS

- **Environmental Aspect** – Element of the organization’s activities, products or services that can interact with the environment
- **Environmental Impact** – Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization’s activities, products or services
- **Hazard** – Source or situation with a potential for harm in terms of human injury or ill health, interaction with the environment, damage to property, damage to the workplace environment, or a combination of these
- **Risk** – The combination of the likelihood and consequence(s) of a specified hazardous event occurring
- **Hazard Identification** – Process of recognizing that hazard exists, its source, and defining its characteristics
- **Risk Evaluation** – The overall process of estimating the magnitude of risk and deciding how significant a risk is
- **Risk Control** – The overall process of eliminating or mitigating the frequency, severity, and extent of the identified hazard
- **Operational Control** – The identification, planning, and management of operations and activities in line with the CSMS policy, objectives and targets

PROCEDURE

- 1.0 The hazard identification process shall be documented as appropriate and will use the follow mechanisms to identify hazards.
- Use process flow diagrams to evaluate environmental aspects by indicating on the diagram where parts of the process may interact with the environment (e.g., air emissions occur or hazardous waste generation).
 - Conduct a job safety analysis for the health and safety hazards assessment.
 - Capture process knowledge for procedures covered by PSM.
 - Conduct a security vulnerability assessment for security related hazards.
 - Establish a review and approval system for new products in production areas, document the potential risk of the new product.
 - Review risks associated with transportation and distribution.
 - Use surveys, interviews or suggestion systems to gather hazard-related input form front line workers and other stakeholders.
 - Conduct drills and simulations to identify gaps or hazards in existing plans.
 - Evaluate hazards introduced by third-party activities.
 - Assess risks associated with new technologies, automation, or AI systems integrated into operations
- 2.0 Hazard identification will be reviewed and updated based on the following “triggers”:
- Audit findings
 - Abnormal or emergency conditions
 - Incidents or near misses
 - Employee or stakeholder feedback
 - Purchase requisition
 - Contracted services
 - Introduction of new raw materials
 - Planned process change
 - Technology changes
 - Changes in applicable EHS&S regulations and/or industry standards
 - Significant organizational changes
 - Changes in products
 - Every three years if none of the above result in review

3.0 Relative risk scores will be assigned for each identified hazard, based on probability of occurrence and severity of consequence. Hazards and Risk Management Team will determine the relative significance of each identified hazard, based on the assigned risk scores.

4.0 Risk Control

4.1 Based on relative risk scores and other information available through the environmental, health and safety, and security programs, the Hazards and Risk Management Team [whose members include, but are not limited to, the Production Managers, the Plant Engineer, Maintenance Supervisor in conjunction with the EHS&S Manager] will prioritize necessary risk control actions or programs. For those risk control actions identified by the Hazards and Risk Management Team, the following mitigating actions will be considered:

- Eliminate the risk with substitution
- Establish appropriate engineering controls
- Establish administrative controls
- Establish procedural controls
- Use appropriate protective equipment

4.2 Any significant hazards that are not managed through a risk control program must be managed under operational control.

5.0 Responsibilities

5.1 Hazards and Risk Management Team will approve the procedure and review/revise as needed.

5.2 Managers/Supervisors will be responsible for the effective implementation of the procedure and ensuring that employees are appropriately trained.

5.3 EHS&S Manager will be responsible for establishing the procedure, direct the Hazards and Risk Management Team and maintain training records.

5.4 Employees will be responsible for complying with the procedure and controls as established by the Hazards and Risk Management Team.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

Example 4: Identification of Legal and Other Requirements Procedure

Company Logo: Company Name: Subject: IDENTIFICATION OF LEGAL AND OTHER EHS&S REQUIREMENTS PROCEDURE	Page _ of _ Procedure #
--	--

APPLICATION

This procedure applies to employees of [company] at the [location] facility.

PURPOSE

To establish and maintain a procedure to identify, have access to, and update as necessary applicable legal and other requirements to which the facility subscribes concerning the CSMS.

DEFINITIONS

- Law – A rule or order that is obligatory to observe.
- Performance Standard - A formal specification that outlines the criteria, conditions, and metrics by which the effectiveness of a control, process, or behavior is measured to ensure it meets safety, health, environmental, and/or security objectives.
- Permit - A written approval issued by a competent authority (internal or external) that outlines the **conditions, precautions, and responsibilities** required to safely perform a task that may involve environmental, health, safety, or security risks.
- Regulation – A rule or order having the force of law issued by an executive authority of government.
- Ordinance – A municipal regulation.

PROCEDURE

1.0 The EHS&S Manager/Coordinator, or a designated individual by the department, is responsible for tracking relevant laws, regulations, and other EHS&S requirements to which the facility subscribes to evaluate potential impact on the facility's operations.

1.1 The EHS&S Department will use techniques that include the following:

1.1.1 Track, identify, and evaluate applicable laws and regulations.

1.1.2 Include commercial databases, information from the trade

association, direct communication with national and state regulatory agencies, and periodic refresher training on applicable laws.

1.2 The following resources will be used to ensure access to and knowledge of up to date legal and other requirements:

- Trade association information
- EHS&S Manager/Coordinator’s regulatory knowledge
- Internet Regulatory Web sites
- County requirements
- Customer Service

2.0 Additional resources, such as consultants or attorneys, may be called upon as necessary.

3.0 The EHS&S Department will maintain a compliance calendar, compliance matrix, or a system that may include a list with dates of legal and other requirements. The compliance procedure will be reviewed annually to ensure compliance with relevant legislation, regulations, and trade association obligations. Any findings will be addressed during the review of the CSMS.

4.0 The EHS&S representative, working with a cross functional team of managers/supervisors at the facility, will correlate these regulations to the business activities as well as to the related hazards and risks.

5.0 The EHS&S representative will distribute information and ensure current legal and other applicable requirements are met.

6.0 Responsibilities

6.1 Senior management will approve the procedure and will be part of the review/revision as appropriate.

6.2 EHS&S Manager/Coordinator of the organization will be responsible for the effective implementation of the procedure and will lead the management team on reviews and revisions.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

ChemStewards[®] Management System

Chapter 2 [Plan/Do]

Developed by

**Society of Chemical
Manufacturers and Affiliates
(SOCMA)**



TABLE OF CONTENTS

[Plan/Do]

Objectives and Targets	page 1
Action Plans	page 3
Responsibilities and Accountabilities	page 6
Glossary of Terms and Acronyms	page 13
Example 1- EHS&S Objectives and Targets Procedure	page 15
Example 2- Action Plan Procedure	page 17
Example 3- Responsibilities and Accountabilities Procedure	page 19

Objectives and Targets

This section addresses how to develop objectives and targets. The facility's objectives and targets may be based on the following:

- The results of the facility's risk assessment
- The context of the organization, with consideration of both internal and external issues
- Aligned with the facility's overall policy and strategic direction
- The specific quantitative measure to be obtained
- The timeframe when the objective is to be reached
- The organization's hazards and risks that are considered significant
- The organization's stakeholder input
- The organization's legal and other EHS&S requirements

The objectives and targets need to reflect the facility's commitment to sustainability and climate change. Each pair of objectives and targets must indicate who is responsible for accomplishment of the objective/target.

Framework for Determining Objectives and Targets

Objectives should be risk based, addressing both potential threats (risks) and opportunities for improvement. The goal is to be proactive, rather than reactive.

Facilities with strong EHS&S organizations include a multi-functional approach to setting objectives and targets. These are sites in which representatives from senior management, stakeholders, and internal teams and employees have input in establishing the objectives and targets.

Characteristics of a System for Objectives and Targets

- An established process for developing EHS&S objectives and targets includes an annual review, the results of risk assessments, and applicable stakeholder input. This process must be documented and clearly communicated.
- A process or practice to ensure that a commitment to continuous improvement is reflected in the organization's objectives and targets.
- Objectives and targets that are coordinated or integrated with other organizational plans, strategies and budgets, especially those that are associated with improvement in business performance (e.g., reducing costs, increasing efficiency of the EHS&S program administration, improving neighbor/community relations, etc.).

Table 1: Examples of Objectives with “Measurable” Targets

Objectives	Targets
Chemical Controls	
Decrease the use of hazardous chemicals in formulations	<ul style="list-style-type: none"> Decrease solvent used in production of Cheater Wax by 15% by the first Quarter of 20XX.
Resource Management	
Reduce energy and water use	<ul style="list-style-type: none"> Reduce energy use by 10% per 100 man-hours from 20XX levels by April 20XX. Reduce water usage per 100 man-hours from 20XX levels by April 20XX.
Develop and maintain a reliable, local workforce to ensure operational continuity and quality of products	<ul style="list-style-type: none"> Establish a technical training partnership with the local high school by Q4 202X, with the aim of hiring at least 5 graduates who complete the program within 12 months
Air Emission Controls	
Limit potential worker exposure of VOCs to regulatory allowed limits (OSHA PEL/STEL/TWA)	<ul style="list-style-type: none"> Evaluate alternative formulations to limit potential worker exposure to VOCs by February 20XX.
Reduce air emissions relative to permit parameters.	<ul style="list-style-type: none"> Demonstrate air emission reductions by 10% by January 20XX, relative to year 20XX baseline.
Security Controls	
Limit access of unauthorized personnel onsite	<ul style="list-style-type: none"> Install motion activated lights and camera system at the loading dock by December 20XX.

Action Plans

Objectives and targets indicate parts of the CSMS that need to be controlled, improved or investigated by a certain date and at a measurable level. The CSMS action plan indicates what critical tasks or steps are necessary to achieve the objective/target, resources [employees, technology or funding] needed to accomplish the goal, individual responsible for each step and date it is to be accomplished or closed out. An action plan is the method or process to follow to achieve a specific goal by translating the objective/target into tangible tasks.

Characteristics of an Action Plan

- Detailed strategy that describes the critical phases involved in achievement of the objectives and targets listing specific personnel responsible for each task.
- Identifies the resource [personnel, funding, etc.] and programmatic needs [steps or tasks] for accomplishing the facility goals.
- A process or practice to ensure that appropriate and adequate resources are provided to accomplish the objectives and targets.

Implementation of Facility Action Plans

- Build on the procedures, plans and programs already established for EHS&S management at the facility.
- Obtain early involvement of applicable employees in establishing and implementing the CSMS program.
- Clearly communicate the tasks defined in the action plan to those employees that need to be acquainted with the expectations and responsibilities.
- Re-evaluate the action plan when changes occur in facility activities, staffing, production changes, products, services, processes, or materials. Include the re- evaluation as part of the change management process.
- Coordinate action plans with overall tactics and strategies that occur at the facility. This should increase the likelihood of significant cost-savings and business improvement opportunities.

Table 2: Example of an Action Plan for an Objective and Target to Reduce Permitted Air Emissions

Objective	Target	Area/ Dept	Process	Significant ESHS&S Concerns	im
Reduce air emissions relative to permit parameters.	Demonstrate air emission reductions by 10% by January 20XX, relative to year 20XX baseline.	Manufacturing Areas With Permitted Emissions	All	Point Sources and Fugitive Acid Mist, CO, H2S, NH3, NOx, VOC, PBT Chemical, Particulate Matter, Odiferous Compounds, and Other Nuisance Emissions.	Improve <u>X</u> Control/ Maintain <u>X</u> Investigate ____

Task/Action Items	Responsible	Resources	Project Start Date	Project Completion Date	Comments (C) /Deliverables (D)
Develop preliminary evaluation of technical feasibility and cost effectiveness of dryer and scrubber modification alternatives	Facility Maintenance Supervisor EHS&S Manager	Vendor quotes	2/1/20XX	3/1/20XX	D – Technical feasibility report of process modification alternatives D – Comparative cost analysis of process modification alternatives
Make scheduled dryer and scrubber modifications to reduce nuisance dust	Facility Maintenance Supervisor	Project funding	4/01/20XX	5/01/20XX	D – Track emissions before and after improvements and record results
Develop preliminary evaluation of technical feasibility and cost effectiveness of evaporator to eliminate impact of bubbler vent emissions [closed system]	Facility Maintenance Supervisor	Vendor quotes, estimate of reductions	3/1/20XX	3/31/20XX	D – Technical feasibility report of process modification alternatives D – Comparative cost analysis of process modification
Make closed system modifications to reduce nuisance dust	Facility Maintenance Supervisor	Project funding	4/01/20XX	5/01/20XX	D – Track emissions before and after improvements and record results
Replace packed agitator on rework tank with mechanical seal to reduce amine emissions	Facility Maintenance Supervisor	Project funding	5/01/20XX	6/01/20XX	D – Track emissions before and after improvements and record results
Install boiler water softeners/tube replacement/feed-water pumps and dust	Facility Maintenance Supervisor	Project funding	6/01/20XX	8/01/20XX	D – Track emissions before and after improvements and design plan for

collectors					reporting results
Install precipitator software controls upgrade	Facility Maintenance Supervisor	Project funding	8/01/20XX	9/01/20XX	D – Track emissions before and after improvements and record results
Compile emission reduction results	EHS&S Manager	Emissions data	11/1/2006	12/1/20XX	D – Prepare report of results and recommendations

Responsibilities and Accountabilities

This section addresses the closely related task of creating an ongoing structure that ensures the facility is equipped with sufficient personnel and other resources to meet the CSMS requirements.

One of the first tasks of CSMS planning is to establish EHS&S leadership with technical support responsibilities and accountabilities. This includes determining the role of senior management for the facility and the appointment of a ChemStewards Coordinator (CSC). The CSC will be responsible for establishing a Cross-Functional Team To aid in the implementation of the program. The Cross Functional Team may include personnel and resources that are responsible for representing their area or department in several facets of the CSMS.

Assigning Responsibility

The facility's top management is accountable for the effectiveness of the management system, including setting objectives and targets. The CSC is a member of the facility's senior management and is responsible for the functioning of the management system. The role of the CSC is to ensure that all tasks relating to the development, implementation, verification and reporting are identified and completed within the appropriate timeframe. The CSC will communicate progress and results of the CSMS to top management for their input.

The CSC is also responsible for overseeing all aspects of task management related to the CSMS, including assignment, scheduling, support, and ensuring timely and successful completion. The CSC facilitates the Cross Functional Team in producing, organizing and maintaining appropriate documentation for the CSMS.

The Cross Functional Team includes those who represent their area or department in identifying EHS&S hazards, evaluating EHS&S risks, setting objectives/targets, implementing management programs, reviewing/tracking internal audit or inspection results, and serving as an information resource. The Cross Functional Team meets on a regular basis to review and discuss the CSMS.

A facility may decide to establish a "Responsibility Matrix" listing CSMS activities and indicating how the activities apply to the facility personnel that perform these functions. Some activities might be carried out at headquarters in a company with multiple facilities. For those facilities, the responsibility matrices must reflect the roles and responsibilities of both the corporate and facility staff. A matrix, organization chart, job descriptions or other ways to exhibit the staffing roles and responsibilities must be included in your CSMS documentation.

The matrix presented in Table 3 is an example of typical assignments applicable to some facilities. It is not meant to prescribe how assignments should be made or how they should be combined. That is the decision of each facility. Further, it is not meant to suggest that CSMS duties should become full-time responsibilities for any one particular job function. This example shows both typical lead roles and roles that often provide significant support. Many CSMS responsibilities will be supported by other functional positions, even though they may not be designated on the matrix.

Table 3: Example of a Responsibility Matrix

Responsibility	Senior Manager (Plant Mgr./ President)	EHS&S Manager (CSC)	Quality	Supervisors: Production, Maintenance, Security	Maintenance Staff	Facility Engineers	IT	HR	Logistics & Purchasing	Accounting & Finance
Communicates importance of CSMS	L	S	S	S		S		S		
Coordinates auditing efforts	S	L	S	S	S	S			S	
Tracks/analyzes new regulations and maintains library	S	L				S				
Obtains permits and develops compliance methods	S	L			S	S	S			
Prepares reports required by regulations	S	L		S	S	S			S	S
Coordinates communications with interested parties	S	L					S	S		
Trains employees	S	S		L			S	S		
Integrates EHS&S into recruiting practices	S							L		
Integrates EHS&S into performance appraisal process	S	S		S		S		L		
Communicates with contractors on EHS&S expectations	S	S		S	L	L	S	S	S	S

Responsibility	Senior Manager (Plant Mgr./ President)	EHS&S Manager (CSC)	Quality	Supervisors: Production, Maintenance, Security	Maintenance Staff	Facility Engineers	IT	HR	Logistics & Purchasing	Accounting & Finance
Complies with applicable regulatory requirements	L	S	S	S	S	S	S	S	S	S
Conforms with facility's CSMS requirements	L	S	S	S	S	S	S	S	S	S
Maintains equipment /tools to control EHS&S concerns	S	S		S	L	S				
Monitors key processes	S	S		L	S	S	S			
Coordinates emergency response efforts	L	S	S	S	S	S		S	S	
Identifies hazards of products, tasks, materials etc.	S	L	S	S	S	S		S	S	S
Establishes EHS&S objectives and targets	L	S		S		S				
Develops budget for EHS&S management	L	S							S	S
Maintains training records	S	S/L		S			S	L		
Maintains CSMS records (non-training)	S	L	S	S	S	S	S	S	S	S
Coordinates CSMS document control efforts	S	L						S		

Role: L=Lead S=Supporting

Determining Accountability

All employees will be accountable for their CSMS responsibilities and roles. This will be documented as per the practices and procedures of the facility. Table 4 and Table 5 present examples of accountability for CSMS responsibilities. These tables are not meant to prescribe how accountability will be assigned for each facility. Accountability may be determined during the annual performance appraisal, for example. Employees may be accountable for negating responsibility via facility discipline procedures.

Table 4: Example of an Accountability Matrix

Accountable Positions for EHS&S Management	Manager	CSMS Responsibilities
Facility Senior Management [Plant Manager, President, etc.]	Company CEO, President or Board of Directors	<ol style="list-style-type: none"> 1. Accountable for effectiveness of management system 2. Approves/Reviews Procedures 3. Allocates Resources 4. Approves Objectives, Targets and CSMS Management Programs aligned with strategic direction and context of organization 5. Appoints CSC 6. Conducts Management Review of CSMS
Production Managers	Senior Management	<ol style="list-style-type: none"> 1. Ownership of Applicable Objectives and Targets 2. Ownership of Applicable Work Instructions/Procedures 3. Schedules Employee Training Programs 4. Allocates Resources 5. Engages in Management Review of CSMS
ChemStewards Coordinator (CSC)	Senior Management	<ol style="list-style-type: none"> 1. Leads CSMS Implementation 2. Writes Procedures and Policies 3. Monitors and Maintains CSMS 4. Facilitates Management Review Meeting 5. Ensures Verification and Submission of CSMS Reporting 6. Facilitates the Cross Functional Team
Cross Functional Team	CSC (CSMS Development and Implementation)	<ol style="list-style-type: none"> 1. Represents Department in CSMS Development Such as Determining Significant Hazards/Risks 2. Recommends Objectives and Targets 3. Implements Improvement Programs 4. Reviews and Tracks CSMS Audit Results 5. Program Ambassador 6. Serves as Information Resource 7. Recommends CSMS Improvements
Manager of Human Resources	Senior Management	<ol style="list-style-type: none"> 1. Supports Training Programs 2. Allocates Training Resources and Manages Records 3. Engages in Management Review
Shift Supervisors	Department Production Managers	<ol style="list-style-type: none"> 1. Provide Employee Training 2. Implement Work Instructions 3. Serve as Information Resource
Technicians	Shift Supervisors	<ol style="list-style-type: none"> 1. Follows Work Instructions, Practices and Procedures 2. Maintains Awareness of CSMS Requirements 3. Provides Feedback on CSMS Program

Table 5: Example of Accountability of Cross-Functional Team and Other Critical EHS&S Individuals

Accountable Individuals	Responsibilities
Facility Cross Functional Team and other critical EHS&S personnel	<p>Hazards/Risks</p> <ul style="list-style-type: none"> • Establishes and maintains procedures or practices to identify environmental hazards. • Develops risk control for identified hazards. • Ensures hazards related to significant risks and impacts are considered in setting objectives. • Ensures hazards/ information is up to date. <p>Legal/Other</p> <ul style="list-style-type: none"> • Establishes and maintains methods to identify and access legal and other requirements. <p>Objectives/Targets</p> <ul style="list-style-type: none"> • Establishes and maintains documented objectives and targets. • Considers legal and other requirements, significant EHS&S risks, technological options, financial operations and business requirements, views of interested parties, and potential circularity impacts. <p>Management Programs/Systems</p> <ul style="list-style-type: none"> • Establishes and maintains programs or practices for achieving objectives and targets. <p>Training</p> <ul style="list-style-type: none"> • Identifies training needs. • Requires all personnel whose work may create a significant impact receive appropriate training. • Establishes and maintains procedures to make employees at all levels aware of importance of conformance to requirements of the CSMS. • Establishes and maintains procedures or practices to ensure that employees at all levels are aware of the significant EHS&S risks of their work, benefits of improved personal performance and the potential consequences of departure from specified operating procedures. <p>Communications</p> <ul style="list-style-type: none"> • Establishes and maintains procedures for internal communication across the facility. • Establishes and maintains procedures for responding to relevant communication from external interested parties. • Considers processes for stakeholder communication on its significant EHS&S risks and record the decision. <p>Documentation and Document Control</p> <ul style="list-style-type: none"> • Establishes and maintains information to describe core elements of the CSMS and provides direction for related documentation. • Establishes and maintains procedures for controlling all EHS&S documents (optional in CSMS).

Operational Control

- Identifies operations or activities associated with significant EHS&S risks.
- Plans activities, including maintenance, to ensure they are carried out under specific conditions.
- Establishes and maintains documented procedures for significant EHS&S risks to cover situations where their absence could lead to deviations from the policy, objectives, and targets.

Emergency Preparedness and Response

- Establishes and maintains procedures to identify and respond to accidents and emergencies.
- Reviews and revises, where necessary, the emergency preparedness and response procedures (particularly after the occurrence of an incident).
- Periodically tests the emergency preparedness and response procedure.

Monitoring and Measurement

- Establishes and maintains documented procedures to monitor and measure, on a regular basis, the key characteristics of operations and activities that have significant EHS&S consequences.

Corrective and Preventive Action

- Records information to track performance for defining responsibility and accountability for investigating nonconformance. Takes preventative actions to mitigate initiating and completing corrective actions.
- Implements and records changes in the documented procedures resulting from corrective or preventive actions.

Records

- Establishes and maintains procedures for the identification, maintenance, and disposition of EHS&S records

Internal Audits

- Establishes and maintains programs and procedures for periodic CSMS audits.

Glossary of Terms & Acronyms

Each industry creates and uses its own “language” to communicate commonly used terms and concepts. The following is a list of commonly used management system terms used in the module. Acronyms are shown in parenthesis next to the term followed by the definition.

Cross Functional Team: Includes members of the facility that support the CSC by identifying EHS&S hazards, determining significant EHS&S risks, setting objective and targets, implementing management programs, reviewing/tracking internal audit or inspection results, and serving as an information resource.

ChemStewards Management System (CSMS): A continuous improvement cycle that builds upon planning, implementing, reviewing and improving the actions that an organization takes to meet its EHS&S obligations.

ChemStewards Coordinator (CSC): Member of the facility’s senior management and responsible for the functioning of the management system. Ensures that all tasks relating to the development, implementation, verification and reporting are identified and completed within the appropriate timeframe. Reports to senior management on the progress and results of the CSMS.

Management Review: A formal, planned meeting where top management reviews the CSMS at defined intervals to ensure its continuing suitability, adequacy, and effectiveness.

Management System (MS): An organized set of interrelated policies, procedures and practices designed and developed by an organization to support specific operational goals.

Objective: Overall EHS&S goals that an organization sets to achieve, and which is quantified where practicable.

Operational Control: Procedures or limits that define operational parameters of a facility [e.g., permit limits, regulatory constraints, design parameters of equipment, calibration specifications, specific work instructions, etc]. The identification, planning and management of operations or activities in line with the CSMS policy, objectives and targets.

Other EHS&S Requirements: Requirements that an organization has committed to following, other than legal requirements.

Records: Proof of actions taken that was outlined in the Management System.

Responsibility Matrix: A chart that illustrates the activities involved with the design, development, operations, maintenance and improvement of a CSMS defined by the personnel that perform these and other functions.

Risk: Combination of the likelihood and consequences of a specified hazardous event occurring.

Risk Control: Actions taken or programs developed to improve areas of the management system so that hazards are lowered/controlled to an acceptable level.

Senior/Top Management: The person or group of people who directs and controls the organization at the highest level. In the context of the CSMS, they are accountable for the effectiveness of the program. They actively promote the program and foster a culture of quality and ethical behavior. The team can be led by the Plant Manager or President of the organization. Define this at your organization level.

Stakeholder: Any person or group that has an interest in the organization's EHS&S performance.

Internal stakeholder – Employees, shareholders, investors and insurers.

External stakeholder – Neighbors, community organizations, customers, suppliers, trading partners, non-governmental organizations, local media or the general public.

Target: Detailed performance requirement that is quantified, measurable and verifiable, applicable to the organization or parts within the organization, arises from the objectives and needs to be met in order to achieve the objectives.

Example 1: Facility Objectives and Targets Procedure

Company Logo: Company Name: Subject: FACILITY EHS&S OBJECTIVES AND TARGETS PROCEDURE	Page _ of _ Procedure #
---	--

APPLICATION

This procedure applies to all employees of [company] at the [location] facility and has been established to define the Objectives & Targets of the ChemStewards Management System (CSMS).

PURPOSE

This procedure addresses how the facility will establish its Objectives and Targets. The EHS&S goals will be risk based and reflect significant hazards and risks, stakeholder input and legal and other EHS&S related requirements, with time frames and responsibilities for accomplishment.

DEFINITIONS

- Objective - Overall EHS&S goals, consistent with the EHS&S policy. Objectives will reflect the facility's significant hazards and risks, stakeholder input and legal and other EHS&S related requirements.
- Target - Detailed performance requirement, quantified and measurable, with assigned deadlines, applicable to the facility or parts thereof. These will be derived from objectives.
- Management Review Team - Facility cross functional team that consists of Plant Engineer, EHS&S Manager/Coordinator, Production Manager, Plant Manager and Maintenance Supervisor, designated to conduct periodic reviews of the CSMS to ensure its effectiveness and continuous improvement.

PROCEDURE

- 1.0 The Management Review Team shall be responsible for ensuring EHS&S objectives and targets are set annually.

- 2.0 The EHS&S objectives and targets shall be determined based on a calendar year [depending on the goals].
- 3.0 Objectives and targets must be consistent with the EHS&S policy.
- 4.0 The Management Review Team will review the status of objectives and targets annually.
 - 4.1 In the event a goal is not met, the Management Review Team shall either increase resources to facilitate completion, adjust the timeframe of the objective & target completion, or modify the goal.
 - 4.2 In the event that new objectives and targets are needed due to modifications to existing products, services or activities, changes in legal requirements, or changes in stakeholder input, the Management Review Team will revise the EHS&S goals.
 - 4.3 EHS&S objectives & targets for the current year will be documented by the Management Review Team. All annual objectives and targets shall be maintained as EHS&S Records.
- 5.0 Responsibilities
 - 5.1 The facility will be committed to establishing a CSMS that drives continuous improvement.
 - 5.2 The Plant Manager and Management Review Team will ensure that the procedure is implemented.
 - 5.3 Facility employees will be responsible for complying with the procedures and implement CSMS goals into their personal objectives and targets, as applicable.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

Example 2: Action Plan Procedure

Company Logo: Company	Page _ of _
Subject: EHS&S ACTION PLAN PROCEDURE	Procedure#

APPLICATION

This procedure applies to employees of [company] at the [location] facility.

PURPOSE

This procedure addresses how the site will establish and maintain the action plans needed to facilitate accomplishment of the facility’s ChemStewards Management System (CSMS) objectives and targets.

DEFINITIONS

- EHS&S Action Plan - A system, practice or procedure designed to achieve the facility’s EHS&S objectives and targets. It includes designation of responsibility for achieving objectives and targets at each relevant function and level of the organization. Includes the means and time frame by which the critical steps are to be achieved.
- Objective – A specific, measurable EHS&S result that an individual, team, or organization plans to achieve within a defined timeframe.
- Target - Detailed performance requirement that is quantified, measurable and verifiable, applicable to the organization or parts within the organization, arises from the objectives and needs to be met in order to achieve the objectives.

PROCEDURE

- 1.0 Action plans will be established based on the facility’s EHS&S Objectives and Targets. The time frame for completion of each program will be specified.
- 2.0 Senior management will determine what tasks are necessary to accomplish facility objectives/targets that the action plan is designed to achieve.

- 3.0 Senior management will determine what resources (personnel, funding, etc.) are necessary to enable the tasks to be carried out.
- 4.0 The facility's ChemStewards Coordinator [CSC] is responsible for ensuring that action plans are established and maintained.
- 5.0 Amendments to action plans may occur due to changes made to facility Objectives and Targets or staffing.
- 6.0 The CSC will formalize the amendment and enact changes required.
- 7.0 The CSC will review the action plans at least semi-annually. The results of these reviews will be reported to the Management Review Team.
- 8.0 Responsibilities
 - 8.1 The Senior Management at the facility will approve the procedure and will direct the review/revision as appropriate.
 - 8.2 Managers/Supervisors will effectively implement the procedure and ensure appropriate communication or training in their departments.
 - 8.3 EHS&S Manager/ Coordinator will be responsible for the development/maintenance of the written procedure and will lead the team on the review/revision as needed.
 - 8.4 The Manager of Human Resources shall be responsible for maintaining CSMS training records.
 - 8.5 Employees will be responsible for following the procedure and supporting the CSMS. Recommend changes to the management team who will review the procedure.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

Example 3: Responsibility and Accountability Procedure

Company Logo: Company Name: Subject: RESPONSIBILITY AND ACCOUNTABILITY PROCEDURE	Page _ of _ Procedure #
---	--

APPLICATION

This procedure applies to employees of [company] at the [location] facility.

PURPOSE

This procedure addresses how the facility will define, establish, document, communicate and maintain the structure, responsibilities, and authority designed for an effective CSMS.

DEFINITIONS

- ChemStewards Coordinator – Member of the facility’s senior management and responsible for the management system. Ensures all tasks relating to development, implementation, verification and reporting are identified and completed within the appropriate timeframe. Reports to senior management on the progress and results of the CSMS.
- Cross Functional Team – Includes members of the facility that support the CSC by identifying EHS&S hazards, determining significant EHS&S risks, setting objective and targets, implementing management programs, reviewing/tracking internal audit or inspection results, and serving as an information resource.

PROCEDURE

- 1.0 The facility senior management (Plant Manager, President, etc.) will ensure that CSMS requirements are established, implemented, and maintained. In addition, the CSC will report on the performance of the CSMS at the Management Review Meeting.

- 2.0 Resources essential to the implementation and maintenance of the CSMS including human resources, specialized skills, technology, and financial resources will be provided by senior management.
- 3.0 The CSMS responsibilities and accountabilities for specific management team members or other employees on the Cross Functional Team will be documented in facility job descriptions.
- 4.0 Job descriptions will be maintained and updated as applicable.
- 5.0 Responsibilities
 - 5.1 Senior management at the facility will be responsible for the procedure and will participate in the review/revision. Senior management may delegate appropriate reviewers to facilitate program benefits.
 - 5.2 Managers/Supervisors will be responsible for the effective implementation of the procedure and ensuring appropriate communication or training in their departments.
 - 5.3 EHS&S Manager/Coordinator will be responsible for the development/maintenance of the written procedure and will lead the Cross Functional Team on the review/revision as needed.
 - 5.4 CSMS training records for all employees will be maintained by Human Resources or another designated resource. Specific instructions or training records will be maintained.
 - 5.5 Each employee will be responsible for following the procedure. Employees shall be encouraged to recommend improvements to the CSMS to the management team.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	Senior Management

ChemStewards[®] Management System

Chapter 3 [Do]

Developed by

**Society of Chemical
Manufacturers and Affiliates
(SOCMA)**



TABLE OF CONTENTS

[Do]

Training, Awareness and Competency	page 1
Communication	page 5
Management System Documentation	page 12
Glossary of Terms and Acronyms	page 19
Example 4- Training, Awareness and Competency Procedure	page 20
Example 5- Communication with Stakeholders Procedure	page 22
Example 6- Document Control Procedure	page 24

Training, Awareness and Competency

This section addresses the training element of the CSMS. Training programs should be designed to achieve the facility goals, objectives and targets established, as well as compliance with the legal and other EHS&S requirements. Special emphasis should be given to training topics that are aligned with legal requirements applicable to the facility. In addition, programmatic areas that represent a relatively high level of risk (e.g., work at heights/fall protection, electrical hazards, line breaking, spill prevention, accidental release prevention) should be prioritized within any training plan.

Characteristics of a System for Training

- **Role-Specific and Risk-Based Content:** Training should be tailored to the specific job functions and associated risks of each employee. For example, technicians working with hazardous materials should receive in-depth training on chemical handling, spill response, and PPE use, while administrative staff may only need general awareness training. Security personnel may need additional training beyond traditional EHS areas. This ensures relevance and maximizes impact.
- **Competency Verification and Continuous Improvement:** A strong system includes mechanisms to assess and verify employee competencies such as testing, observation, or performance reviews and provides refresher training when gaps are identified. It should also incorporate feedback loops to improve training based on incidents, audits, or regulatory changes. The following indicators could be used to measure and track the success of the training program:
 - **Written assessments** with a minimum passing score (e.g., ≥80%) for regulatory and hazard-specific topics.
 - **Practical evaluations** (e.g., PPE donning/doffing, spill response drills, security breach notification drills) observed and scored by supervisors or EHS&S personnel.
 - **Behavioral observations** during routine tasks to confirm safe practices and adherence to procedures.
 - **Refresher training triggers** based on incident reports, audit findings, or changes in job scope or regulations.
- **Integrated Tracking and Documentation:** Training systems must include a robust method for tracking completion, scheduling future sessions, and maintaining records for compliance and audits. This can be achieved through a training matrix, calendar, or learning management system (LMS), ensuring transparency and accountability.
- **Alignment with Regulatory Requirements and Standards:** Training programs must reflect applicable federal, state, and local regulations (e.g., OSHA, EPA, USCG, DOT) and industry standards (e.g., ISO 14001, OHSAS 18001). This ensures legal compliance and supports certification efforts while also reinforcing employee understanding of their regulatory responsibilities.

Regardless of role or level, every employee plays a critical part in the CSMS. From Line Technicians to Senior Management, personnel must be equipped with the knowledge and tools to recognize and manage risks effectively. A robust EHS&S training system ensures that all employees are aware of:

- The facility's Environmental, Health, Safety & Security (EHS&S) policy and its alignment with organizational goals.
- The significant hazards and risks associated with their specific work activities, including potential environmental and safety impacts.
- Their key roles and responsibilities in maintaining safe operations and supporting the CSMS framework.
- The procedures, work instructions, and operational controls relevant to their tasks, especially those designed to mitigate risk.
- The importance of conformance with CSMS requirements and the consequences of deviation.

Understanding the risk implications of non-compliance is essential. Failure to follow regulatory and internal EHS&S protocols can result in serious outcomes, including employee injury, environmental releases, security breaches, and regulatory penalties. Therefore, training must not only inform but also instill a proactive mindset toward risk identification, control, and prevention.

An example of an EHS&S regulatory training matrix is presented in Table 1. In addition, the facility will need to track training for each employee and contractor, where applicable. Tracking can be via a monthly training calendar or included in the matrix. Table 2 presents an example of a regulatory training matrix which includes a column to track projected training.

Table 1: Environmental Health Safety and Security Regulatory Training Guide

This table is intended to assist Managers and/or Supervisors with the identification of environmental, health, safety, and security training requirements for personnel. This table addresses common regulatory training for general job classifications. Specific training is based on a particular employee’s responsibilities. Red colored “X,” indicates that EHS&S currently has regularly scheduled training modules, Blue colored “X” indicates training that needs to be developed. Green color indicates annually required training programs. Employees not in any of these categories should contact EHS&S to determine training needs.

Training Requirements

Job Categories	Job Safety Analysis	Blood borne Pathogens	Electrical Power Safety	Emergency Stops and Entanglement Prevention	Machine Guarding/ Shop Safety	Hot Work Permit/ Welding Safety	Confined Space	Fire Safety	Ladder Safety	Spill Protection, Control and Counter Measures	Fork Lift/Powered Industrial Vehicle Safety	Hazard Communication	Hazardous Waste Management	Hearing Conservation	Lockout-Tagout	Security and Protection	Personal Protective Equipment	Respiratory Protection	Heat Stress	Hazardous Waste Operations [HAZWOPER]	Storm Water Pollution Prevention	Emergency Response and Incident Reporting
Administrative Personnel [no contact with chemical or physical hazards-e.g., HR, IT, Administrators, Accounting, etc.]								X								X						X
Technician/Operators [e.g., Operations, Blending, Packing, Coating, Finishing, etc.]	X	X*		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
M&O/Facility Personnel [e.g., plumbers, electricians, HVAC, mechanics, painters, shop, superintendents, managers.]	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X*	X	X*	X	X
Custodial Personnel [e.g., janitors, custodians, housekeepers, etc.]	X	X*		X				X	X*			X	X	X		X	X		X			X
Drivers/Equipment Operators [e.g., operators of Powered Industrial Vehicles, Sweepers, Forklifts, Clamp- lifts, Platforms, etc.]	X							X			X	X	X	X			X		X			X
R&D/QA Lab Technicians	X							X				X		X		X	X		X		X	X
Emergency Response Team		X					X	X		X		X	X				X	X	X	X		X
Shipping and Receiving	X							X				X				X	X					X

* This training may not be required for all personnel in this category, but rather for those that have a job function that may put them at risk. Call EHS&S for assistance.

Table 2: Example of an EHS&S Regulatory Training Matrix with Tracking

Training Requirements	Job Functions Requiring Training	Frequency	Planned Training Date
Bulk Materials Handling	Pipe-Fitters And Operations	Every Three Years And New Hire	8/15/xx
CERCLA TSCA 8 (E) Spill Reporting	Security, Maintenance, And Environmental Personnel	New Hire And Initial Assignment	1/30/xx
Integrated Emergency Response [ERP] and Spill Prevention Control Countermeasure Plan [SPCC]	Security, Maintenance, Environmental Personnel, Wastewater Treatment Operators	Annual	6/18/xx
Storm Water Pollution Prevention Plan and BMPS	Environmental Personnel and Waste Water Treatment Operators	Every Three Years And New Hire	5/23/xx
Waste Water Treatment and Disposal (Including Sampling and Analysis Training)	Waste Water Treatment Operators	Annual And New Hire	3/29/xx
Permit Monitoring and Record Keeping	Environmental Personnel and Other Employees Whose Job Related To Seas	New Hire And Initial Assignment	8/1/xx
Operation Of Air Pollution Control System	Maintenance and Environmental Personnel	New Hire And Initial Assignment	2/19/xx
Lockout/Tagout Training	All Personnel	Annual	10/2/xx
Powered Industrial Vehicles (Fork Lift Truck)	Licensed Fork Lift Truck, Overhead Crane Operators,	Once Every Three Years, Each New Driver	6/12/xx
Security and Protection	Security and Maintenance	Annual	11/19/xx
Hot Work Permit Program/Welding	Maintenance	Annual	4/12/xx
Hazard Communication	All Personnel	New Hire And Initial Assignment	5/16/xx
Respiratory Protection Program	Personnel Required To Wear Respirators	Annual	3/8/xx
HAZWOPER	Security And Supervisors	Annual	12/11/xx
RCRA Awareness	Waste Management Coordinator	New Hire And Initial Assignment	1/24/xx
CSMS Awareness	All Employees and Full-Time On-Site Contractors	New Hire And Initial Assignment	10/12/xx
Hearing Conservation	All Employees and Full-Time On-Site Contractors	Annual	7/26/xx
Confined Space	Maintenance and Operations	Annual	2/17/xx
Fire Safety	All Employees and Full-Time On-Site Contractors	Annual	8/29/xx
Bloodborne Pathogens	Maintenance and Housekeeping	Annual	10/23/xx
Heat Stress	Operations, Maintenance and Housekeeping	New Hire And Initial Assignment	5/3/xx
Personal Protective Equipment	Operations, Maintenance, Supervisors, Technical	New Hire And Initial Assignment	3/8/xx
Ladder Safety	Operations, Maintenance, Supervisors, Technical	New Hire And Initial Assignment	4/16/xx
Machine Guarding	Operations, Maintenance, Supervisors, Technical	New Hire And Initial Assignment	1/16/xx
Electrical	Operations, Maintenance, Supervisors, Technical	Annual	9/19/xx

Communications

Effective communication is a cornerstone of a successful CSMS. It ensures that critical EHS&S information, especially risk related insights, is clearly conveyed across all levels of the organization and to external stakeholders. Communication supports transparency, reinforces compliance, and enables proactive risk management by ensuring that everyone understands their roles, responsibilities, and the potential consequences of non-conformance.

This section outlines the framework for both internal and external communications, including how facilities should:

- Share EHS&S policies, procedures, and performance metrics with employees, contractors, and visitors.
- Engage stakeholders in meaningful dialogue about hazards, risks, and improvement initiatives.
- Respond to inquiries and concerns from community members, regulators, and customers.
- Track and document communications to ensure accountability and continuous improvement.

By establishing structured communication channels and assigning clear responsibilities, facilities can foster a culture of safety, trust, and responsiveness while ensuring that risk related information is timely, accurate, and actionable.

Identifying Stakeholders

There is a wide array of internal and external groups in most facilities that have a vested interest in the site's EHS&S programs. The various internal and external stakeholders may include, but are not limited to, the following:

Potential Internal Stakeholders

Internal stakeholders are individuals or groups within the organization who influence or are affected by EHS&S performance. Examples include:

- Line Technicians and Operators
- Shift Supervisors
- Maintenance Personnel
- Facility Engineers
- EHS&S Managers and Coordinators
- Senior Management (Plant Manager, President, etc.)
- Human Resources
- Quality Assurance Teams
- Purchasing and Logistics Staff
- Accounting and Finance Departments
- IT and Data Management Teams
- Internal Committees (e.g., Safety Committee, Emergency Response Team)

Potential External Stakeholders

External stakeholders are individuals or organizations outside the facility who have an interest in or may be impacted by the facility's EHS&S activities. Examples include:

- Customers and Clients
- Suppliers and Contractors
- Regulatory Agencies (e.g., EPA, OSHA, USCG, DOT)
- Local Emergency Responders (Fire Department, Police, EMS)
- Community Advisory Panels (CAPs)
- Local Residents and Neighborhood Associations
- Non-Governmental Organizations (NGOs)
- Industry Associations (e.g., SOCMA)
- Media Representatives
- Investors and Insurers
- Local Government Officials
- Environmental Advocacy Groups

Communication efforts should start with stakeholders who have expressed interest in the facility's EHS&S operations. Generate a list of those individuals and establish outreach methods to ascertain their input. The list should be reviewed and updated as needed.

Identifying relevant stakeholders is a foundational step in developing an effective communication plan. Facilities should:

- **Start with Existing Relationships**
Review current contacts, contracts, and communication channels to identify individuals or groups already engaged with the facility.
- **Assess Risk and Impact**
Identify stakeholders based on their potential to be affected by or influence EHS&S risks. Consider proximity to operations, regulatory authority, or supply chain involvement.
- **Solicit Input Internally**
Engage employees, managers, and public relations personnel to suggest stakeholders based on operational knowledge and community interactions.
- **Consult External Sources**
Reach out to local planning agencies, emergency responders, and trade associations for recommendations on relevant stakeholders.
- **Review Historical Data**
Examine past incidents, audits, or community feedback to identify stakeholders who have previously expressed interest or concern.
- **Maintain and Update a Stakeholder List**
Create a living document that tracks stakeholder names, roles, contact information, and communication history. Review and revise this list regularly to reflect changes in operations, regulations, or community dynamics.

Benefits of Including and Engaging Stakeholders in the CSMS

Engaging both internal and external stakeholders is a strategic component of a successful CSMS. Stakeholder involvement enhances transparency, strengthens risk management, and fosters a culture of shared responsibility for Environmental, Health, Safety, and Security (EHS&S) performance.

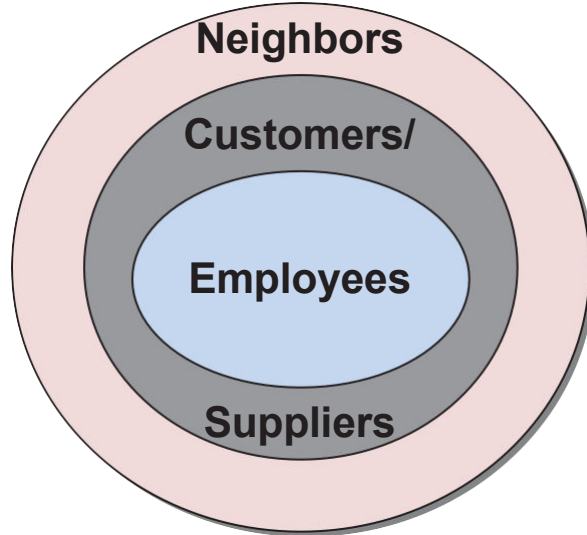
Key Benefits of Stakeholder Engagement

- **Improved Risk Awareness and Responsiveness**
Stakeholders often have unique insights into operational vulnerabilities, regulatory expectations, and community concerns. Engaging them early and consistently helps identify emerging risks and enables proactive mitigation strategies.
- **Enhanced Compliance and Credibility**
Transparent communication with regulators, customers, and community members demonstrates a facility's commitment to compliance and continuous improvement. This can strengthen relationships, reduce regulatory scrutiny, and support third-party certifications.
- **Stronger Internal Alignment and Accountability**
Involving internal stakeholders, such as operators, supervisors, and support teams, ensures that EHS&S goals are understood and integrated into daily operations. This promotes ownership of safety practices and improves adherence to CSMS procedures.
- **Informed Decision-Making and Continuous Improvement**
Stakeholder feedback can reveal gaps in training, documentation, or operational controls. Facilities that actively listen and respond to stakeholder input are better positioned to refine their management systems and achieve measurable improvements.
- **Community Trust and Social License to Operate**
Engaging external stakeholders, including local residents and emergency responders, builds trust and demonstrates a facility's commitment to environmental stewardship and public safety. This can reduce opposition to operations and enhance the facility's reputation.
- **Supply Chain Resilience and Collaboration**
Including suppliers, contractors, and customers in CSMS communications helps extend EHS&S best practices throughout the value chain. This supports consistent standards, reduces liability, and improves overall supply chain performance.

Successful Communication with Stakeholders

Effective communication with stakeholders is essential to the success of a CSMS. It fosters transparency, builds trust, and ensures that Environmental, Health, Safety, and Security (EHS&S) goals are understood, supported, and continuously improved across all levels of the organization and its external interfaces. Figure 1 depicts the level of interest stakeholders have in the facility programs and implementation of a CSMS.

Figure 1: Levels of Stakeholder Interest



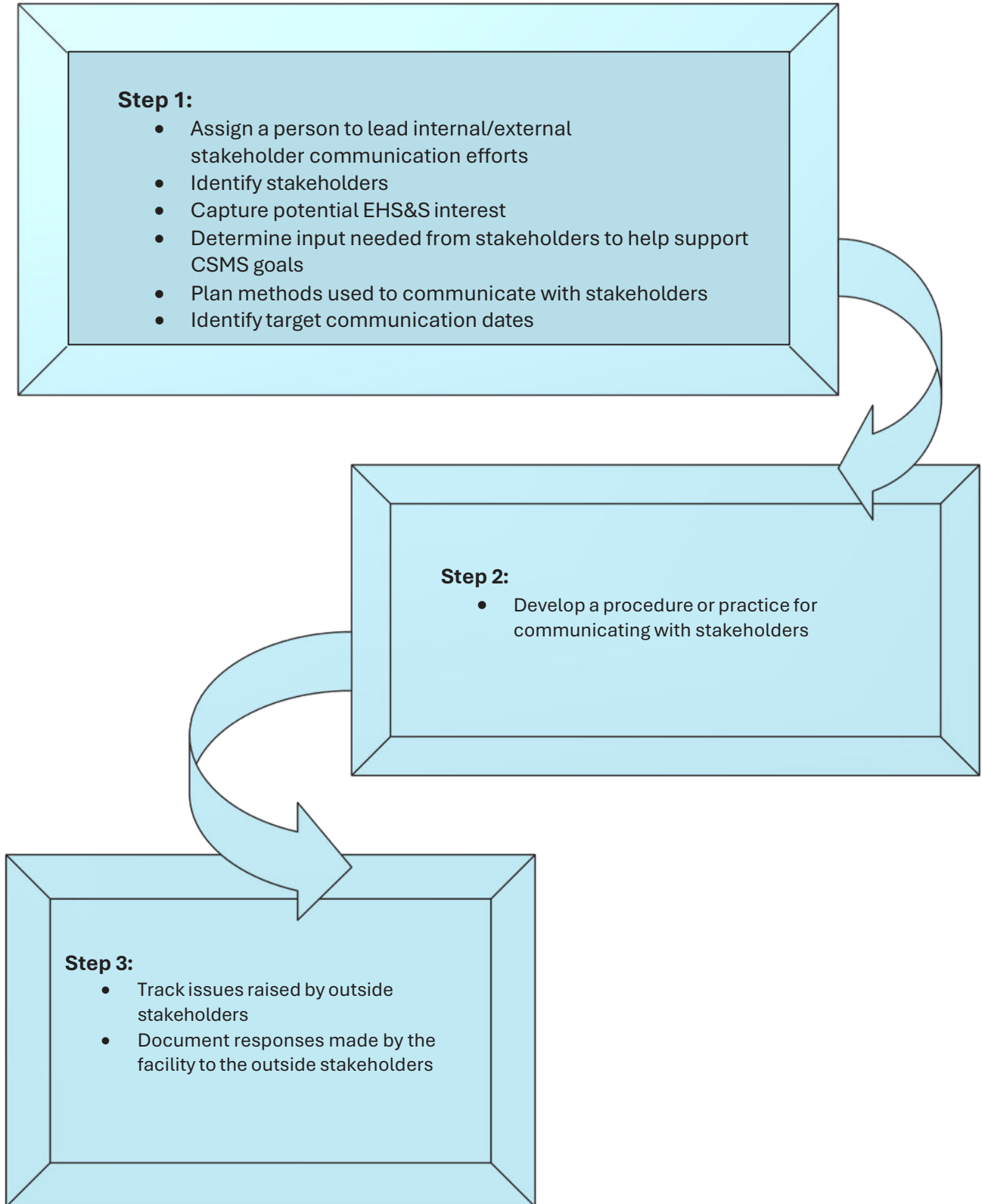
Effective stakeholder communication ensures transparency, strengthens credibility, and supports compliance with ChemStewards principles. It aligns organizational goals with stakeholder expectations and promotes sustainable business practices. The following are a few guidelines for successful communication:

- Begin interaction early in the implementation process. In most cases, the cooperation of several people within the facility will be needed to gather information and develop a CSMS that works.
- Set communication goals and objectives that need to be achieved. Setting goals will help get the right message across without overwhelming people with too much information or missing the mark. Establishing a procedure or practice for communication is advantageous.
- Communicate regularly with internal stakeholders and integrate the interaction with other efforts such as:
 - Speaking directly with employees
 - Bulletin board postings
 - Email messages
 - Articles in the facility newsletter
- Develop several methods of regular communication with external stakeholders concerning facility EHS&S efforts and goals. These methods can expand upon existing practices such as:
 - Using the company's internal website to communicate the EHS&S policy or other important elements of the facility CSMS and to solicit comments or suggestions
 - Including CSMS information and accomplishments in the annual report
 - Posting EHS&S information on the company's website
 - Scheduling community open houses with tours of the facility
 - Producing a fact sheet on the facility's activities, the CSMS program, and

- the facility scheme to include stakeholders
 - Establishing a community advisory panel or participating in a local working group
 - Holding public meetings as needed
- Ensure stakeholder dialogue is a two-way process. Any stakeholder will want to know that their comments and concerns are being heard and considered. Convey that the site is genuinely interested in their input and explain how they are to be included.
- Assign responsibility for external communications to a specific individual (communications liaison). There should be two additional employees to substitute in when the communications liaison is absent.
- Track all external communication to ensure that input from stakeholders is recorded and facility responses are documented:
 - Maintain records of stakeholder interactions.
 - Use standardized forms or digital tools for logging communication.
 - Review communication logs during management reviews.

A three-step summary of the above guidelines is presented in Figure 2. Step one depicts planning and information collection, the second step is to establish a procedure or system for communicating with stakeholders, and the last step is to establish tracking methods for any external communication. A form for recording an external communication interaction is given in Example 1.

Figure 2: Steps for Successful Communication



Example 1: Record of Conversation for Stakeholder Contact

Date	Email address or Telephone #	To	From	Topic	Action Needed?	Resolution	Return Feedback
Xx/xx/xxx	XXX	Security Manager	Neighbor	Light from loading dock shining in bedroom window	Yes	Redirected light	Xx/xx/xx

Management System Documentation

This section addresses the CS program requirement that the facility management system be documented. Document control, although not mandatory, is an important practical point in implementing a management system.

- **Benefits of Document Control**
 - Ensures employees have access to current and approved procedures.
 - Reduces risk of outdated or incorrect information being used.
 - Facilitates audits and regulatory compliance.
 - Improves operational efficiency and training effectiveness.
- **Recommended Documentation Structure**
 - Level 1: CSMS Manual – Core principles and overarching framework.
 - Level 2: Procedures – Covering all CSMS elements such as policy, risk assessment, communication, and emergency response.
 - Level 3: Work Instructions – Detailed steps for specific tasks.
 - Level 4: Records and Forms – Evidence of implementation and compliance.
- **Best Practices for Maintaining Accuracy and Flexibility**
 - Implement version control with unique identifiers and revision dates.
 - Schedule periodic reviews (at least annually) to ensure relevance.
 - Use electronic document management systems for accessibility and security.
 - Maintain a master list of all controlled documents.
 - Provide training to employees on document access and updates.

CSMS documentation includes essential paperwork related to the ChemStewards program. A straightforward method document CSMS materials is a manual that outlines the main elements of the site's management system. This format provides a technique for locating and reviewing procedures or work instructions. Examples 2A and 2B offer two references for the contents of possible documents found in a CSMS Manual. The various levels of documentation in the management system manual, along with associated characteristics, are presented in Table 4. Descriptions of definitions, typical content, identification methods, typical locations, accessibility, control and ownership explain the purpose of each level.

Example 2A: Document Contents for a CSMS Manual

TABLE OF CONTENTS

Level One	Procedure #
CSMS Core Principles	XXXXX
EHS&S Manual	XXXXX
Level Two - Procedures (Covers CSMS Elements)	
Facility EHS&S Policy Procedure Hazards and Risk Assessment Procedure	XXXXX
Legal and Other Requirements Procedure	XXXXX
EHS&S Objectives and Targets Procedure	XXXXX
Roles, Responsibilities and Job Descriptions	XXXXX
Communication Procedure	XXXXX
Document and Data Control Procedure	XXXXX
Operational Control Procedures	XXXXX
Emergency Preparedness and Response Procedure Monitoring and Measurement Procedure	XXXXX
Non-Conformance and Corrective/Preventive Action Procedure Records Maintenance Procedure	XXXXX
Site Security Procedure	XXXXX
IT & Cybersecurity Procedure	XXXXX
Internal Audits Procedure	XXXXX
Level Three – Work Instructions or Procedures	
Lockout/Tag Out Form	XXXXX
Inspection Forms	XXXXX
Post Orders	XXXXX
Communication Log	XXXXX
Level Four-Tables, Records and Reports	
List of Prioritized Hazards and Risks	XXXXX
Compliance Obligations Registrar	XXXXX
Objectives and Targets Matrix	XXXXX
Responsibilities and Accountabilities Matrix	XXXXX
Training Program Matrix	XXXXX
Performance Dashboard	XXXXX
Master Records List	XXXXX
Management Review Summary Reports	XXXXX
Level Four-Forms	
Risk Assessment & Scoring Worksheets	XXXXX
External EHS&S Contact Form	XXXXX
Manager Meeting Agenda/Notes Form	XXXXX

Example 2B: Document Contents for a CSMS Manual

Master List of CSMS Procedures and Documents

Title	Procedure Number	Issued/ Revised Date
Level 1: CSMS Core Principles	NA	NA
Level 2: Management System Procedures		
EHS&S Policy	OTC-1	X/XX
Visitor and Contractor Policy	OTC-2	X/XX
Establishing Personal Goals with SMART	OTC-3	X/XX
Performance Evaluation Procedure	OTC-4	X/XX
Disciplinary Action Procedure	OTC-5	X/XX
Facility EHS&S Objectives and Targets	OTC-6	X/XX
EHS&S Records and Documentation Maintenance and Retention	OTC-16	X/XX
Management of Change Procedure	OTC-34	X/XX
Hazard and Risk Assessment Procedure	OTC-36	X/XX
Incident Investigation and Reporting Procedure	OTC-45	X/XX
Level 3: EHS&S Operational Procedures		
Walking and Working Surfaces	OTC-7	X/XX
Powered Industrial Vehicles	OTC-8	X/XX
Respiratory Protection	OTC-9	X/XX
Fall Protection and Ladder Safety Program	OTC-10	X/XX
Process Safety Management Program	OTC-11	X/XX
Environmental Sampling Procedure	OTC-12	X/XX
Hearing Conservation Program	OTC-13	X/XX
Electrical Safety Program	OTC-14	X/XX
Hazard Communication	OTC-15	X/XX
Industrial Hygiene Program	OTC-17	X/XX
Confined Space Entry	OTC-18	X/XX
Hot Work	OTC-19	X/XX
Machine Guarding	OTC-20	X/XX
Local Exhaust Ventilation	OTC-21	X/XX
Personal Protective Equipment	OTC-22	X/XX
Hazardous Waste Management Program	OTC-23	X/XX
Blood-Borne Pathogens	OTC-28	X/XX

Title	Procedure Number	Issued/ Revised Date
Lab Hood Ventilation	OTC-30	X/XX
Handling and Storage of Flammable Liquids	OTC-55	X/XX
Lockout/Tagout Procedure	OTC-56	X/XX
Level 4: Other Documents-Permits, Plans, Audits, Facility Checklists, Inspection Records		
Program Element Verification [PEV]	NA	X/XX
Safety Equipment Inspections	NA	X/XX
Housekeeping Inspections	NA	X/XX
EH&S Audit	NA	X/XX
Security Vulnerability Analysis	NA	X/XX
Fire Department Inspection	NA	X/XX
Spill Prevention and Pollution Control Plan	NA	X/XX
Storm Water Pollution Prevention Plan	NA	X/XX
Emergency Response Preparedness Plan	NA	X/XX
Air Permit	NA	X/XX
Water Permit	NA	X/XX
Hazardous Waste Manifests	NA	X/XX
Process Safety Management	NA	X/XX
Job Safety Analysis-Maintenance	NA	X/XX
Job Safety Analysis-Shop	NA	X/XX
Job Safety Analysis-Lab Technician	NA	X/XX
Job Safety Analysis-Fork Lift Operator	NA	X/XX
Job Safety Analysis-Chemical Operator	NA	X/XX
Job Safety Analysis-Liquid Packaging Operator	NA	X/XX
Job Safety Analysis-Tank Farm Technician	NA	X/XX

Table 4- Documentation Levels in Management Systems with Associated Characteristics

	Level 1 Documents	Level 2 Documents	Level 3 Documents	Level 4 Records	Level 4 Reference	Uncontrolled
Definition	Core Principles and Manuals - High-order guidance, very general, what will be done, assertion of values and leadership	Management System Procedures - designed to lead management and operational activities	Operational Procedures or Work Instructions- Guidance and standards governing the process, intended to provide specific technical information specific to daily work activities	Written or Electronic Information- Providing a permanent memory of organizational actions or events, information, such as a completed action plan or task	Uncontrolled Documents- Recognized and used for recommendation but not implicit in the actions to be taken,	Documents the organization chooses not to control but may have some individuality of a controlled document
Perspective in Time	Potential or forward-looking, intended to guide an organization in its focus and aspirations	Potential and anticipatory about what to do, and the operational considerations of management and coordination	Potential and fairly detailed, specific to the organization & its people, guiding materials, methods, tools, protocols.	Historic and documentary in nature, looking back at what has been done; documentation of transactions and events completed in the past	May be prospective or retrospective in nature, addressing past history or addressing possible alternative future contingencies. Any type of document could be selected and cited as a reference	Probably the most important common feature of such documents is that they will have in common an irrelevance to the operations and issues of concern to the subject enterprise or organization.
Typical Content	The CSMS Core Principles or the other EHS&S manuals	CSMS Element Procedures such as internal audit procedure	A work instruction on how to sample a well or how to do the lock-out/tag-out process to protect employees	A calibration report or a well sample, a record of an inspection or a corrective action, etc.	A standardized test procedure as defined or approved by ANSI or ASTM, or another authoritative body	A newspaper story, promotional literature from a supplier, a memo from a regulator or trade association notification, etc
Identification Method	Controlled internally by defined document ownership (preparation, approval, review and revision), version control, distribution control	Controlled internally by defined document ownership (preparation, approval, review and revision), version control, distribution control	Controlled internally by defined document ownership (preparation, approval, review and revision), version control, distribution control	Records management system with a retention schedule and may be indirectly controlled internally by virtue of the embedded information, unique in time and space or by regulatory control	May be, and ideally should be controlled externally, to secure a unique identity and thus ensure validity as a reference	By definition, these are uncontrolled
Location	Framed in wall hangings, on letterhead, in newsletters, also in official organizational documentation	Current version in manuals and handbooks, or in analogous electronic files	In operating areas, and ideally they would be readily accessible - in manuals and handbooks, or in analogous electronic files	Working case files, customer orders, records management computer system, long-term storage warehouse, archives, etc.	Library or technical reference shelves, engineering section or legal staff offices, in electronic files, on web sites, etc.	Anywhere and everywhere
Access or availability	Public, executives, managers, supervisors and employees	Executives, managers, supervisors and many employees	Internal managers, supervisors, and employees	All authorized internal parties in an organization	Any employee who needs to know and is aware of the location and availability	Anyone with knowledge of the documents' existence and location
Content	Expectations and vision of leadership for the organization	About 80% how and 20% what	About 80% how and 20% what	Almost entirely recording what and sometimes some of the why and how of an action.	May be just about anything; what, why, how, when, where, who etc.	May be just about anything; what, why, how, when, where, who etc.
Ownership or Control	Executive level	Managerial level	Operational and supervisory level	Clerical level	Managerial and Librarian and technician level	Not applicable

Document Control

Document control is a critical component of an effective ChemStewards Management System (CSMS). It ensures that essential documents such as policies, procedures, work instructions, and records are accurate, current, and accessible to authorized personnel. Proper document control supports compliance, reduces operational risk, and promotes consistency across the organization.

Definition of Controlled Document

A controlled document is the official, current version of a document that is managed under a formal system to ensure it can be located, accessed, verified, and protected from unauthorized use. Controlled documents are subject to version control, approval workflows, and periodic review to maintain accuracy and relevance.

Features of a Strong Document Control System

Key features include:

- Unique identifier for reference and identity
- Version control and revision tracking
- Accessibility for authorized personnel
- Protection from unauthorized use
- Workflow for review and approval
- Timely updates and notifications
- Retention and archival procedures

Hard Copy vs. Electronic Copy

Organizations often maintain documents in both hard copy and electronic formats. Each approach has advantages and disadvantages that should be considered when designing a document control system.

Hard Copy:

- Positive: Easy access without technology; useful during power outages or emergencies.
- Negative: Difficult to keep current; prone to physical damage or loss; requires storage space.

Electronic Copy:

- Positive: Simplifies version control; easy to update and distribute; searchable and space efficient.
- Negative: Requires cybersecurity measures; dependent on technology and power availability.

Document Control is a requirement under ISO 9000 [Standard for a Quality Management System]. One system for Document Control that seems to work well is when the electronic version of documents and forms is the controlled version while the hard copy is printed from the electronic copy with validity only for the day printed.

Whatever form of document control system is used, it is a good idea to develop a master list

of procedures and documents which will generate an inventory for the CSMS. For a reference of diverse formats to implement a master list, see Examples 2A and 2B – Table of Contents for a CSMS Manual.

It is judicious for the facility to generate a procedure for Document Control. An important part of that procedure should be the use of a “Document Control Coding” scheme. A document control coding format is presented in example 3 as a reference for work instructions and/or procedures. For forms and labels there are a number of companies with software or products for coding such as the one described below.

Example 3: Document Control Coding Scheme for CSMS

- For work instructions and/or procedures, use CSMS-# (number in sequential order of creation) and issue date (e.g., CSMS 7-040525).
- **UNSPSC (United Nations Standard Products and Services Code)**
A globally recognized classification system for products and services across industries.
<https://www.ungm.org/Public/UNSPSC>
<https://www.undp.org/unspsc>

Glossary of Terms & Acronyms

Each industry creates and uses its own language to communicate commonly used terms and concepts. The following is a list of commonly used management system terms used in the module. Acronyms are shown in parenthesis next to the term followed by the definition.

Document Control: Procedures for controlling all documents to ensure that they can be located, periodically reviewed, revised as necessary, and approved for adequacy by authorized personnel. Provides that current versions of relevant documents are available at all locations where operations essential to the effective functioning of the management system are performed and obsolete documents are promptly removed from all points of issue or use. Ensures against unintended use and that any obsolete documents are retained for legal and/or knowledge preservation purposes.

ChemStewards Management System (CSMS): A continuous improvement cycle that builds upon planning, implementing, reviewing and improving the actions that an organization takes to meet its EHS&S obligations.

CSMS Policy/Procedure: A written facility statement that summarizes the organization's direction for achieving CSMS goals; intentions and principles in relation to its overall EHS&S performance, which provides a framework for action and a backup for its EHS&S objectives and targets.

Management System (MS): An organized set of interrelated policies, procedures and practices designed and developed by an organization to support specific operational goals.

Records: Proof of actions taken that was outlined in the ChemStewards Management System.

Senior Management: An EHS&S-knowledgeable, facility based team, who has the authority and resources necessary to make changes in procedures and/or practices. The team can be lead by the Plant Manager or President of the organization.

Stakeholder: Any person that has an interest in the organization's EHS&S performance.

Internal Stakeholder – Employees, shareholders, investors and insurers.

External stakeholder – Neighbors, community organizations, customers, suppliers, trading partners, non-governmental organizations, local media or the general public.

Example 4: Training, Awareness and Competency Procedure

Company Logo: Company Name: Subject: TRAINING, AWARENESS AND COMPETENCY PROCEDURE	Page _ of _ Procedure #
--	--

APPLICATION

This procedure applies to employees of [company] at the [location] facility.

PURPOSE

To identify, define, plan and communicate education requirements for facility employees relative to EHS&S regulatory, workplace tasks and CSMS required training.

PROCEDURE

1.0 Training

1.1 Training Matrix and Schedule

- 1.1.1 A training matrix and training schedule or calendar will be established and maintained by the person(s) responsible for EHS&S regulatory and CSMS training at the facility.
- 1.1.2 Training matrix must identify the type of training required based on job function.
- 1.1.3 Both the training matrix and training schedule must be reviewed at least annually and updated when applicable or when requested by senior management.
- 1.1.4 Reviews are to be in consultation with the individual(s) responsible for environmental, health, safety and security regulations and for the CSMS to ensure continuing training adequacy.

1.2 Training Programs

- 1.2.1 Individuals with appropriate knowledge, expertise and experience in EHS&S and in the CSMS will develop the programs.
- 1.2.2 Programs will cover both regulatory and management system training.
- 1.2.3 New, part-time, transferred employees, and permanent full-time on-site contractors will be included in the EHS&S training program as applicable.

2.0 Awareness

- 2.1 EHS&S regulatory and CSMS awareness training shall be implemented as stipulated in the current version of the training matrix.
- 2.2 All existing employees and full-time on-site contractors shall receive awareness training during initial CSMS implementation. New hires and contractors shall receive the training as part of New Employee Orientation training.

3.0 Competence

- 3.1 Employee competence relevant to the EHS&S regulatory and CSMS is determined through testing on the training material and through observation of performance by the employee's supervisor.
- 3.2 Refresher training will be presented if competency is not determined.

4.0 Records

- 4.1 Training records must be maintained in a manner consistent with the procedure for other facility records.
- 4.2 Work instructions will be maintained by the department managers or supervisors.
- 4.3 The person(s) responsible for EHS&S and CSMS training shall maintain the training records for each individual.

5.0 Responsibilities

- 5.1 Senior management will approve the procedure and will be part of the review/revision as appropriate.
- 5.2 EHS&S Manager/Coordinator of the organization will be responsible for the effective implementation of the procedure and will lead the management team on reviews and revisions.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

Example 5: Communication with Stakeholders Procedure

Company Logo: Company Name: Subject: COMMUNICATION WITH STAKEHOLDERS PROCEDURE	Page _ of _ Procedure #
---	--

APPLICATION

This procedure applies to employees of [company] at the [location] facility.

PURPOSE

To define the process for internal CSMS communication between the various levels/ functions of the organization, and for receiving, documenting or responding to relevant CSMS communication from either internal or external stakeholders.

PROCEDURE

1.0 Internal CSMS communications among the various levels and functions of the organization will be accomplished as follows:

- Supervisors will communicate employee-generated CSMS issues to the Production Manager. Communication of the issues from employees will be addressed by the Production Manager, either directly or through the employee's immediate supervisor.
- An EHS&S Employee Committee or Safety Committee will meet monthly to enhance employee communications.
- Internal communications will be accomplished by the use of bulletin boards, e-mail, memos, work instructions, signs, labels, shift meetings, "tool box talks", and corrective action requests.

2.0 Schemes for receiving and documenting relevant communication from external interested groups or individuals are as follows:

- Any external communication received concerning hazards/risks or CSMS must be directed to the Plant Manager for an appropriate response.
- The Plant Manager or his designee will document the contact on the External EHS&S Communication form.
- Appropriate response to external communication will be determined by the Plant Manager and Public Relations or Human Resources.

3.0 Modus operandi for communication with public or local authorities concerning emergency planning, and for external communication on significant CSMS programs and issues are as follows:

- Communication with public or local authorities concerning emergency preparedness and response will be as prescribed in the Emergency Preparedness and Response Plan.
- No information, other than the CSMS Policy or documents submitted under EPCRA requirements will be made public without a request for information.
- A Community Advisory Council or the LEPC may be used as a communication forum for EHS&S issues and to seek community dialogue and input to CSMS programs.

4.0 Responsibilities

- 4.1 Supervisors will communicate employee-generated issues to the Production Manager.
- 4.2 Production Manager will address issues from employees either directly or through the employee's immediate supervisor.
- 4.3 Plant Manager along with PR or HR will address and document any external communication.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

Example 6: Document Control Procedure

Company Logo: Company Name: Subject: DOCUMENT CONTROL PROCEDURE	Page _ of _ Procedure #
--	--

APPLICATION

This procedure applies to employees of [company] at the [location] facility.

PURPOSE

To describe the document control system for instigation, review, authorization, distribution, maintenance and removal of all CSMS related documents.

DEFINITIONS

- **Document Proprietor** - Originator of the document.
- **Controlled Document** - Any document subject to control by a system utilizing an identification number placed in the upper left corner of the first page.
- **Obsolete Document** - Any document that has expired due to revision and has been removed from the document control system.
- **Document Identification Number**- Alphanumeric numbering system used for verification/ recognition purposes.
- **Master List** - List generated showing all controlled documents with revision numbers.
- **Uncontrolled Copy** - A copy of a document not under document control system.

PROCEDURE

1.0 Document Proprietor

1.1 Writes or prepares the document and submits for review to Senior Management.

- 1.2 Revises the document, if applicable, based on the senior management review.
- 2.0 Senior Management
 - 2.1 Reviews new or revised documents in concurrence with appropriate Management Team members. Clarifies with the document proprietor, any errors, discrepancies or inconsistencies found during the review.
 - 2.2 Submits management team approved documents to the ChemStewards Coordinator [CSC] for release using email.
- 3.0 CS Coordinator
 - 3.1 Manages the document and establishes control via a document identification number.
 - 3.2 Reviews all new and revised documents.
 - 3.3 Archives one copy of the obsolete document.
 - 3.4 Distributes the approved document and updates the master list of CSMS procedures and documents.
- 4.0 Document Control Coding
 - 4.1 Will be used as a scheme for assigning a unique identifier to the facility procedures, work instructions, forms and labels.
 - 4.2 CSC will determine document control coding for the site.
- 5.0 Electronic Document
 - 5.1 Considered the controlled document for the facility.
 - 5.2 Will be issued a document control identification number.
- 6.0 Hard Copies of Documents
 - 6.1 Can be printed from the electronic document
 - 6.2 Only valid for 24 hours from the print date.
- 7.0 Documents with External Origin
 - 7.1 External origin documents will not be controlled and are considered a uncontrolled document at the facility.
 - 7.2 Records received from outside sources will be reviewed and filed per the Records Maintenance Procedure.

8.0 Document Review

- 8.1 All documented procedures will be reviewed once every two years for accuracy and correctness unless specified otherwise by a regulatory agency.
- 8.2 If a procedure has been changed within the previous two years, that will be considered the periodic review.
- 8.3 The “Master List” of procedures and documents will be maintained and updated as necessary.

9.0 Responsibilities

- 9.1 CSC will be responsible for maintaining the document control function for the CSMS.
- 9.2 Senior Management is responsible for the review of all documents established for CSMS conformance or for EHS&S regulatory compliance.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

ChemStewards[®] Management System

Chapter 4 [Do/Check]

Developed by

**Society of Chemical
Manufacturers and Affiliates
(SOCMA)**



TABLE OF CONTENTS

[Do/Check]

Operational Control	page 1
Emergency Preparedness and Response	page 4
Monitoring and Measurement	page 7
Glossary of Terms and Acronyms	page 12
Example 1- Operational Control Procedure	page 13
Example 2- Calibration Procedure	page 15
Example 3- Emergency Preparedness and Response Procedure	page 17
Example 5- Monitoring and Measurement Procedure	page 19

Operational Control

The organization's EHS&S policy, objectives, and targets should be integrated into operational controls. Operational controls usually take the form of documented procedures, work instructions, best management practices, engineering technology solutions, design modifications, or posted information. Operating criteria that are critical to production must reflect stakeholder expectations.

It is not necessary to start this process fresh. Most specialty-batch chemical manufacturers have the vast majority of necessary EHS&S related operational controls documented. Even so, it is crucial to canvass the entire facility operations to match existing procedures, work instructions, best management practices, engineering technology solutions, design modifications, and posted placards with the list of relevant requirements. There are four additional tasks associated with this element:

1. Considering EHS&S impacts of operations along the value chain;
2. Ensuring that the procedures you have are suitable and adequate;
3. Ensuring management of change accounts for EHS&S requirements; and
4. Developing a preventative maintenance plan to minimize equipment breakdowns and excessive depreciation.

Develop Operational Control Related Training

Achieving success in meeting EHS&S objectives depends upon making sure that each person responsible for implementing or reviewing operational controls has received adequate training. After operational controls are drafted or revised, provide training to ensure applicable employees understand procedures and/or work instructions along with their role in the implementation of such practices.

Establish a Calibration Program

Calibration is an important component of operational controls. Identify process equipment and activities that affect its EHS&S performance. As a starting point, look at the key process characteristics and regulatory compliance requirements to identify equipment that needs to be calibrated.

Examples of equipment that should be calibrated are as follows:

- Gauges for measuring cooling water temperature for a condenser
- Pollution control devices
- Confined space air monitoring equipment
- pH meters
- Lab equipment for measuring biochemical oxygen demand
- Ventilation systems [local exhaust]
- Lab hoods
- Scales
- Personal exposure and protective devices

Table 1 – Examples of Operational Controls at Chemical Manufacturing Facilities

Category of Activity	Operational Control (e.g., work instructions)
Purchase of Raw Materials	<ul style="list-style-type: none"> • Subcontractor Requirements • Material Specifications • Transportation Requirements
Tank Farm and Fuel Transfer	<ul style="list-style-type: none"> • Above Ground Tank Inspection • Fuel transfers • Spill Prevention • Spill Reporting • Spill clean-up and Corrective actions • Secondary Containment Inspections
Storage Raw Materials (chemicals) and Hazardous Waste Accumulation	<ul style="list-style-type: none"> • Hazardous Waste Area Inspections • Bulk Storage and Containment • Containerized Material Storage • Hazardous Waste Satellite Accumulation • Container Labeling • Empty Container Handling • Hazardous Waste Operations Procedure • Hazardous Chemical Handling • Waste Manifest/Chain of Custody • Bulk Cargo Transfer Inspection • Use of compatibility guidelines (reactive hazards)
Wastewater Management	<ul style="list-style-type: none"> • Wastewater Handling • Sanitary Waste Disposal • Storm Water Best Management Practices • Facility Conditions
Shops and Facility Maintenance	<ul style="list-style-type: none"> • Environmental Compliance Assessment Checklist • SCBA Use • Respirator Use • Dust Mask Use • Fork Truck Inspection • Procedure for Pressure Washing Near Water • Lockout-Tagout Procedures • Maintenance and Machine Shop Checklist • Disposition of Fluorescent Bulbs, Batteries, and Mercury items
Air Quality Management	<ul style="list-style-type: none"> • Refrigerant Programs • Incinerator Controls • Storage tank off-gassing controls • Tracking of NOx emissions from boiler operations • Preventative maintenance on baghouses/cyclones, etc. • Tracking emissions • Employee exposure monitoring • Pulmonary Testing
Security	<ul style="list-style-type: none"> • Post Orders (work instructions) • Security Controls
Tolling Operations	<ul style="list-style-type: none"> • Technology transfer procedure • Management of change process

Note: Reference other EHS&S Management Practices, such as Process Safety.

1. Examples of the Relationship Between Objectives and Target to Operational Control

Risk based objectives and targets form the focus for an EHS&S Management Program. A successful program may reduce the use of hazardous chemicals, minimize employee exposure, and/or secure the plant perimeter. Alternatively, it may be necessary to alter existing operational controls (i.e., change existing or create new work instructions) to reflect operational requirements.

Objective	Target
Decrease use of hazardous chemicals	Decrease hazardous chemical use 15% by [Date]

Listed are some examples of operational controls applicable to this objective and target:

- Update existing (or) create new work instructions to minimize waste of hazardous chemicals
- Develop work instructions for Purchasing to specify the preference for non-hazardous chemicals sourced closer to the user of the product
- Evaluate wastes impacts from alternative chemical use

Objective	Target
Reduce worker exposure to VOCs to less than regulatory allowed limits (OSHA/PEL/STEL/TWA)	Reduce the air concentration of Styrene to below the OSHA PEL (100ppm) limit by [date]

Listed are some examples of operational controls applicable to this objective and target:

- Improve ventilation [lab hood or local exhaust] to minimize employee exposure
- Confirm appropriate personal protective equipment (PPE) and respiratory protection is being used
- Engage employees in work process evaluation to identify opportunities to minimize exposure.

Objective	Target
Limit unauthorized access to site	Audit badge access readers by [date]

Listed are some examples of operational controls applicable to this objective and target:

- Field check badge access across site
- Rezone badge access areas to limit personnel to appropriate areas
- Update Human Resources protocols to deactivate badge access when employees leave the company

Emergency Preparedness and Response

Despite a facility's best efforts, accidents and other emergency situations can occur. Effective emergency preparation and response can reduce injuries, prevent or minimize environmental hazardous releases, protect employees and neighbors, reduce asset losses,

and minimize downtime.

An effective emergency preparedness and response (EP&R) program should include provisions for the following:

- Assessing the potential for accidents and emergencies;
- Preventing incidents and associated EHS&S risks;
- Responding to incidents (emergency plans and procedures);
- Mutual aid agreements (if applicable);
- Testing of emergency plans and procedures periodically; and
- Mitigating hazards associated with accidents and emergencies.

Review a facility's emergency response performance after an incident has occurred to improve response activities. Use this review to determine if more training is needed or if emergency plans and procedures should be revised.

Several environmental, health and safety regulatory programs require emergency plans and/or procedures.

Table 2: Examples of Requirements Related to EP&R

Regulatory Driver	Requirement
RCRA (Resource Conservation and Recovery Act)	Hazardous Waste Contingency Plan (LQG), Preparedness and Prevention Planning (LQG and SQG)
CWA (Clean Water Act)	Spill Prevention, Control and Countermeasure Plan (SPCC) and Storm Water Pollution Prevention Plans (SWPPP)
OSHA (Occupational Safety and Health)	Process Safety Management
CAAA (Clean Air Act Amendments)	Risk Management Program
EPCRA (Emergency Planning and Community Right-To-Know Act)	Community Right-to-Know Reporting and Coordination with Local and State Emergency Response Committees [311 and 312 Reporting]

Integrated Contingency Plans combine the requirements of multiple regulatory programs into one plan. While reviewing EP&R documents for the CSMS, consider such a streamlined approach.

1. Planning

Two EP&R planning components that may be overlooked are 1) how to identify the potential for accidents, and 2) how to prevent emergencies and mitigate their impact.

A Cross Functional Team (Cross Functional Team) includes representatives from engineering, operations, maintenance, EHS&S, and the workforce. This team can evaluate potential emergencies by asking a series of “what if” questions related to hazardous materials, activities, and processes employed at the site. In addition to normal operations, the Cross Functional Team should consider startup and shutdown of process equipment and other abnormal operating conditions.

When developing a detailed EP&R plan, a facility can work to ensure everyone onsite, including new employees, visitors and contractors, knows what to do in an emergency. It is important that everyone at the facility be aware of the procedure for internal and external notifications (i.e., contact name, organization name, phone number of facility emergency response coordinator, facility response team personnel, and federal, state, and local officials). Communicate with local officials (fire department, hospital, etc.) about potential emergencies at the site and how they can support its response efforts. Consider giving a facility tour to your local response agency.

2. Maintenance

Points to consider concerning the development and maintenance of a facility’s EP&R plan:

- Conduct drills to reinforce training and evaluate the effectiveness of EP&R plans/procedures.
- Provide wide access to EP&R plans and procedures, and post placards with summarized instructions in areas where high hazards exist. Include phone numbers for the on-site emergency coordinator, local fire department, local police, hospital, rescue squad, and others, as appropriate.
- Revise and improve EP&R plans after drills, training, or actual emergencies.

- Ensure that the EP&R plan describes the following:
 - Potential emergency situations (such as fires, explosions, spills, releases of hazardous materials, transportation incidents, security breaches, and natural disasters);
 - Amount and location of hazardous materials on-site;
 - Key organizational responsibilities, including the emergency coordinator;
 - Arrangements with local emergency support providers;
 - Emergency response procedures, including emergency communication procedures;
 - Location, categories and maintenance of emergency response equipment;
 - Training/testing of personnel, including the on-site emergency response team if applicable;
 - Testing of alarm/public address systems;
 - Evacuation routes and exits (map); and
 - Assembly points.

Table 3 - Example Emergency Preparedness and Response Requirements Matrix

The emergency preparedness and response requirements matrix may include, but is not limited to, the following scenarios. These examples illustrate potential situations for an emergency plan to address.

Potential Emergency Scenario	Potential Impact	Personnel Responsible	Procedures Needed	Training Needed
Storage Tank Release	Soil or groundwater impacts	Maintenance	Spill control plan (e.g., SPCC)	Yes
Power Outage	Safe shutdown, Loss of Data	Operations, Information Technology	Operational instructions, Business Contingency Plan	Yes
Unconscious Employee Within Confined Space	Death	Confined Space Entry Team Leader	Confined Space program and entry permit	Yes

Monitoring and Measurement

Each facility must decide what will be monitored and measured under the CSMS. One method is to evaluate all applicable legal requirements for the site along with the stakeholder concerns, significant risks, and associated objectives and targets. The facility can then expand the evaluation to other key metrics, such as costs or energy consumption, which may improve business performance of the facility. Another approach is to start with applicable legal requirements and then build upon the SOCMA required metrics.

Monitoring and Measurement enables the facility to perform the following:

- Evaluate EHS&S performance; including key characteristics of operations and activities that can have significant environmental, health/safety risks, security and/or compliance impacts;
- Assess compliance with legal and regulatory requirements for EHS&S; and
- Conduct reviews of the EHS&S performance of carriers, suppliers, distributors, customers, contractors and third party providers.

1. Monitoring Key Components [Performance Indicators]

A facility may consider adopting the concept of the “vital few” as a management tool. That is, choose a limited number of EHS&S key components that may have a substantial impact on the outcome of a process. The key is to determine what the components are and how to measure them.

Process mapping can help determine key components. There are several types of key components or key performance indicators, which can be measured to provide information about the facility’s performance relative to EHS&S management and operations. These types of key performance indicators are shown in bold below:

- **Management Performance Indicators**
Provides information on the facility’s efforts to manage the following:
 - Training
 - Resource allocation
 - Purchasing
 - Funding
 - Programs included in EHS&S project plans
 - EHS&S objectives and targets status
- **Operational Performance Indicators**
Provides information on the EHS&S performance of specific operations, such as:
 - Inputs (e.g., quantity of materials processed vs. recycled, or energy or water used)
 - Operation and maintenance
 - Training effectiveness (e.g. collect employee feedback on training);

- Emergency events and non-routine operations;
 - Outputs (waste, emissions, noise, heat, etc.); and
 - Contractor service provided by activity.
- **Environmental Performance Indicators**
Provides information on the following:
 - Effluent discharges - e.g., pH, temperature, biological oxygen demand (BOD), chemical oxygen demand (COD), other parameters
 - Air emissions – e.g., NOx, SOx, VOCs, particulates and others
 - Hazardous and nonhazardous waste generation
 - Electricity usage
 - Refrigerant management – e.g. Leak rates, equipment reliability
 - Regulatory compliance audit results
 - Employee engagement
 - Percentage of solid waste recycled/reused
 - Energy or water use per unit of production
 - Incident investigations
 - **Health and Safety Performance Indicators**
Provides information on health and safety operations of the facility, such as:
 - Near Miss rate
 - OSHA Incident Rate
 - Contractor OSHA Incident Rate
 - Accident Investigations
 - Job Safety Hazards Analysis
 - Safety Inspections
 - Regulatory compliance audit results
 - **Security Performance Indicators**
Provides information concerning the security of the facility, such as:
 - Physical plant security
 - Distribution of product
 - Cyber security
 - Inspections conducted
 - Training completed

The most effective EHS&S monitoring and measurement systems use a combination of outcome and process measures.

- **Outcome Measures [Lagging Indicators]**
Focuses on the results of a process or activity, such as:
 - Amount of waste generated
 - Number of spills that took place
- **Process Measures [Leading Indicators]**
Focuses on “upstream” factors, such as:

- Amount of paint used per unit of product
- Number of employees trained on a topic.

A combination of process and outcome measures can be selected that is appropriate and workable for a facility. Many facilities have effective monitoring and measurement systems in place. Do not assume that you need to discard or discount any of those systems. In most cases they will serve for CSMS purposes. Review the systems that are already in place, evaluate these and modify them if necessary, and implement appropriate changes.

2. Selecting Performance Indicators

Select measurement criteria (performance indicators) to evaluate the success of your EHS&S management system. Performance indicators account for the status of objectives and targets.

Select indicators that help in evaluating progress toward individual objectives, as well as indicators that focus on how well the overall EHS&S management system is functioning. This will assist in measuring success and whether program improvements need to be made.

One approach is to measure actions, such as the quality of input from stakeholders, how current your EHS&S program and operational control documents are, or training effectiveness. It is also advisable to select and use performance indicators that identify the performance of carriers, suppliers, distributors, customers, contractors, and third-party providers. Satisfaction surveys and/or a complaint log may be used for this purpose.

The CSMS program measurement criteria worksheet was designed to help organizations map its current methods for monitoring and measurement, as shown in Example 4.

Example 4: CSMS Program Measurement Criteria Worksheet

Performance Area	Leading Indicators (Proactive Metrics)	Target	Measurement Source	Reporting Method	Review Method
CSMS Conformance	% of planned internal audits completed on schedule	100%	Audit Schedule Tracker	Monthly Status Reports	Management Review
EHS&S Policy/Procedures	% of employees trained on updated policies within 30 days of release	100%	Training Records	LMS Reports	Management Review
Process/Operational Control	% of critical controls verified during routine inspections	≥ 95%	Inspection Checklists	Power Ap	Facility Ops Reviews
Improvement Programs	% of improvement actions initiated within 30 days of identification	≥ 90%	Action Tracking System	Progress Reports	Ops & Mgmt Review
Work Instructions & SOPs	% of SOPs reviewed and updated within review cycle	100%	Document Control System	SOP Review Logs	EHS & Ops Reviews
Compliance Readiness	% of compliance tasks completed before due date	100%	Compliance Calendar	Task Completion Reports	Management Review
Regulatory Preparedness	% of mock inspections completed per plan	100%	Internal Audit Schedule	Mock Audit Reports	Management Review
EHS Operational Indicators	% of processes with real-time monitoring for emissions, discharges, etc.	≥ 80%	Monitoring Systems	Environmental Dashboards	EHS Reviews
Resource Efficiency	% of energy/water-saving initiatives implemented vs. planned	≥ 90%	Project Tracker	Sustainability Reports	Management Review
Program Milestones	% of milestones achieved on time (e.g., certifications, assessments)	≥ 95%	Project Plans	Status Dashboards	Management Review

Contractor & Supplier Oversight	% of contractors trained on site-specific EHS requirements before work begins	100%	Contractor Onboarding Logs	Compliance Reports	Facility Ops Reviews
Stakeholder Engagement	% of stakeholder feedback actions addressed within 30 days	≥ 90%	Feedback Logs	Action Tracking Reports	Ops & Management Review

Glossary of Terms & Acronyms

Each industry creates and uses its own “language” to communicate commonly used terms and concepts. The following is a list of commonly used management system terms used in the module. Acronyms are shown in parenthesis next to the term followed by the definition.

Operational Control: Procedures or limits that define operational parameters of a facility [e.g., permit limits, regulatory constraints, design parameters of equipment, calibration specifications, specific work instructions, etc]. The identification, planning and management of operations or activities in line with the CSMS policy, objectives and targets.

Objective: EHS&S goal that an organization sets to achieve, and which is quantified where practicable.

Outcome Measures: Results of a process or activity, such as the amount of waste generated or the number of spills that took place.

Process Measures: Upstream factors, such as the amount of paint used per unit of product, or the number of employees trained on a topic.

Target: Detailed performance requirement that is quantified, measurable and verifiable, applicable to the organization or parts within the organization, arises from the objectives and needs to be met to achieve set objectives.

Example 1: Operational Control Procedure

Company Logo: Company Name: Subject: OPERATIONAL CONTROL PROCEDURE	Page _ of _ Procedure #
---	--

APPLICATION

This procedure applies to all employees of [company] at the [location] facility.

PURPOSE

To ensure EHS&S operational control for applicable procedures that could have significant consequences for (company facility name).

PROCEDURE

- 1.0 Operating Procedures
 - 1.1 Environmental, health, safety, and security operational controls will be maintained.
 - 1.2 Specific operational controls and/or work instructions will be provided to the appropriate employees as needed.
- 2.0 Preventive Maintenance
 - 2.1 Preventive Maintenance will be performed per manufacturer's recommendations.
 - 2.2 Records will be maintained by the appropriate departments.
- 3.0 Training Requirements
 - 3.1 Managers/Supervisors will be trained and competent in all facets of the operational controls.
 - 3.2 Technical personnel will receive an overview of the EHS&S operational controls, and will be trained in procedures and work instructions relating to the control of operations which could have EHS&S impacts and which regulates the on-the-job performance.
 - 3.3 Contractors will receive an overview of the procedures and/or work instructions that relate to EHS&S operational control and will be trained in procedures and work instructions relating to the control of operations with EHS&S impacts and which regulates the on-the-job performance.
 - 3.5 Vendors/Suppliers will be informed of CSMS requirements that are applicable to them.

4.0 Responsibilities

- 4.1 Senior management at the facility will approve the procedure and will participate in the review/revision as appropriate.
- 4.2 Managers/Supervisors will be responsible for the effective implementation of the procedure, ensuring appropriate training and visual inspection/testing for competency of employees within their departments.
- 4.3 EHS&S Manager/Coordinator will be responsible for the development/maintenance of the written procedure and will lead the team on the review/revision as needed.
- 4.4 Human Resources shall be responsible for maintaining the training records of all employees on the operational control procedure. Specific work instruction training/inspection records will be maintained by the department.
- 4.5 Each employee will be responsible for following the procedure and appropriate work instructions for operational control. Recommend changes to the management team who will review the procedure. Have the authority to act within the parameter of each operational control to minimize any potential significant occurrence.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

Example 2: Calibration Procedure

Company Logo: Company Name: Subject: CALIBRATION PROCEDURE	Page _ of _ Procedure #
---	--

APPLICATION

This procedure applies to all employees of [company] at the [location] facility.

PURPOSE

To ensure that environmental, health, safety, and security monitoring equipment used by employees or outside contractors is calibrated as needed to meet EHS&S requirements.

DEFINITIONS

Environmental, health and safety and security monitoring equipment used to measure physical or chemical properties which may include, but is not limited to, temperature gauges, gas meters, pH meters, photo-ionization detectors, scales and pressure drop gauges.

PROCEDURE

- 1.0 Equipment critical to the monitoring of EHS&S performance will be
 - Calibrated according to the instructions given by the equipment manufacturer.
 - Used according to the manufacturer's specifications.
 - Calibrated to a national standard (e.g., ANSI) or to the manufacturer's standard when there is no applicable national standard.
- 2.0 Calibration Log
 - 2.1 A calibration log will be maintained for each piece of equipment.
 - 2.2 New equipment will be calibrated prior to first use.
 - 2.3 When calibration shows that equipment is outside of calibration specifications, calibration frequency will be increased to ensure equipment is within calibration range at all times.

2.4 Equipment that is not able to be calibrated within the manufacturer's specs will not be used until properly repaired.

3.0 Storage/Transportation

3.1 All equipment will be stored according to manufacturer's specification or stored in a manner to reduce the likelihood of damage to the equipment.

3.2 All equipment will be transported in a manner that will not adversely affect the calibration status of the equipment.

4.0 Responsibilities

4.1 Senior management at the facility will approve the procedure and will participate in the review/revision as appropriate

4.2 Managers/Supervisors will be responsible for the effective implementation of the procedure.

4.3 EHS&S Manager/Coordinator will be responsible for the development/maintenance of the written procedure and will lead the team on the review/revision as needed.

4.4 Human Resources shall be responsible for maintaining the training records of all employees on the procedure.

4.5 Each employee will be responsible for following the procedure.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

Example 3: Emergency Preparedness and Response Procedure

Company Logo: Company Name: Subject: EMERGENCY PREPAREDNESS AND RESPONSE PROCEDURE	Page _ of _ Procedure #
---	--

APPLICATION

This procedure applies to all employees of [company] at the [location] facility.

PURPOSE

Procedure defines the framework for preparing and responding to emergencies involving potential environmental, health, safety and security (EHS&S) related incidents at [company facility's name].

PROCEDURE

- 1.0 Potential EHS&S related incidents and emergencies shall be identified and documented in the Emergency Preparedness and Response Requirements Matrix. The matrix will be reviewed semi-annually (or more frequently if significant changes occur at the facility) by the Cross Functional Team.
- 2.0 Methods to respond, mitigate, and prevent emergencies shall be established and maintained by the Emergency Response Coordinator and located on site in the Security Office.
- 3.0 Communication roles and responsibilities within the facility, as well as contact to outside support, shall be established and maintained at the facility via the emergency response plan.
- 4.0 Drills or table-top exercises will be conducted at least annually. The EH&S Department shall maintain records of these exercises. Methods to respond, mitigate, and prevent environmental emergencies shall be amended as required based on the results of these exercises. Actual incident responses may be used to fulfill this requirement.
- 5.0 Following an incident, the cause of the emergency and responding emergency methods shall be reviewed. Corrective/preventive actions will be identified and implemented.
- 6.0 Methods to respond, mitigate, and prevent releases that arise as a consequence of an environmental incident must be documented and implemented. EHS&S must be notified for any environmental emergency. All incidents will be reviewed as

soon as possible. Any applicable revision to the process, based on a review of how the incident was managed, will be documented and implemented at the site.

- 7.0 Regulatory agencies will be notified by the EHS&S Management Team of reportable incidents via facility procedure.
- 8.0 Emergency response activities are to be conducted in accordance with appropriate personnel, appropriate procedures, and governmental regulations.
- 9.0 EHS&S Management Team will designate the Emergency Response Coordinator.
- 10.0 Responsibilities
 - 10.1 Senior management at the facility will approve the procedure and will participate in the review/revision as appropriate
 - 10.2 Managers/Supervisors will be responsible for the effective implementation of the procedure.
 - 10.3 EHS&S Manager/Coordinator will be responsible for the development/maintenance of the written procedure and will lead the team on the review/revision as needed.
 - 10.4 Human Resources shall be responsible for maintaining the training records of all employees on the procedure.
 - 10.5 Each employee will be responsible for following the procedure.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

Example 5: Monitoring and Measurement Procedure

Company Logo: Company Name: Subject: MONITORING AND MEASUREMENT PROCEDURE	Page _ of _ Procedure #
--	--

APPLICATION

This Policy applies to employees of [company] at the [location] facility.

PURPOSE

To establish and maintain monitoring and measurement of key characteristics for operations and activities which have a significant impact on the environment, the health and safety of our employees, the security of the work place, compliance with regulatory requirements and conformance with the CSMS requirements.

DEFINITIONS

- **Operational Controls** - Procedures or limits that define operational parameters of a facility [e.g., permit limits, regulatory constraints, design parameters of equipment, calibration specifications, specific work instructions].
- **Objective** - Overall EHS&S goal that an organization sets to achieve, and which is quantified where practicable.
- **Target** - Detailed performance requirement that is quantified, measurable and verifiable, applicable to the organization or parts within the organization, arises from the objectives and needs to be met to achieve the objectives.
- **Measurement** - To ascertain the dimensions, quantity or capacity of a performance.
- **Monitor** - To check systematically with a view to collecting certain specified categories of data.
- **Performance Indicators** - Specific parameters that can be measured, monitored, and/or controlled.

PROCEDURE

- 1.0 The EHS&S Management Team will review site specific objectives and targets. Based on this information, a system of measuring and monitoring for each target will be established. The assigned designee for each objective will track performance and report, as needed, to the EHS&S Management Team. Minimum reporting requirement will be semi-annually. In the event a target is not being achieved, the EHS&S Management Team will evaluate additional corrective or preventive actions.
- 2.0 Performance Indicators (as determined by facility senior management) will be identified, monitored and measured, as required.
- 3.0 Performance Indicators will be verified through internal audits relevant to the operational controls in place at the site and functioning as designed.
- 4.0 Internal EHS&S audits will be performed to verify conformance with the facility's associated procedures and work instructions.
- 5.0 EHS&S permit/regulatory performance will also be monitored and measured by conducting inspections, audits, and/or other means necessary to monitor for regulatory compliance.
- 6.0 Equipment used to measure EHS&S performance will be calibrated and maintained according to calibration procedures, manufacturer's specifications, and/or regulatory requirements. In the event an outside service is calibrating environmental or health and safety equipment, a copy of the calibration certificate will be maintained.
- 7.0 Monitoring and measurement data will be reported within specific guidelines per the regulations and maintained as an EHS&S record.
- 8.0 Monitoring and measurement data will be included, where applicable, in the management review meeting.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

ChemStewards[®] Management System

Chapter 5 [Check]

Developed by

**Society of Chemical
Manufacturers and Affiliates
(SOCMA)**



TABLE OF CONTENTS

[Check]

Non-Conformance and Corrective/Preventive Action	page 1
Records	page 2
Glossary of Terms and Acronyms	page 4
Example 1- Non-Conformance and Corrective/Preventive Action Procedure	page 5
Example 3- Records Maintenance Procedure	page 8

Non-Conformance and Corrective/Preventive Action

Addressing non-conformances is essential for maintaining compliance and driving continual improvement within the ChemStewards Management System (CSMS). A robust corrective and preventive action process ensures that deviations are identified, analyzed, and resolved effectively, reducing risks and improving operational reliability.

Formalizing the non-conformance and corrective/preventive action process provides a structured approach for tracking, investigating, and resolving issues. It ensures accountability, transparency, and consistency across all departments and supports compliance with regulatory and industry standards.

Methods Used to Determine Non-Conformances

Common methods include:

- Internal management system and compliance audits
- Results of monitoring and measurement
- Neighbor and community complaints
- Employee input
- Third-party management system audits

Recommended Components to Handle Non-Conformances

Key components include:

- Clearly defined responsibilities for identifying, investigating, and correcting issues
- A system to track non-conformances and corrective actions
- Root cause analysis for incidents
- Action plans with timelines and accountability
- Documentation and verification of corrective/preventive actions

Training Recommendations for Employees

Training is critical to ensure employees understand their roles in addressing non-conformances and implementing corrective/preventive actions. Recommendations include:

- All employees should be trained on the procedure for non-conformance and corrective/preventive action.
- Employees in affected job functions should receive additional training on incident investigation and reporting.
- Reinforce the concept of Plan-Do-Check-Act and the importance of feedback loops for continual improvement.

Example 2: Sample for a Corrective/Preventive Action Tracking Log

Description of Non-conformance	Date Identified	Individual Responsible for C/P Action	Description of Action Taken	Date Completed
No data to verify training was performed in a timely manner.	XX/XX/XXXX	EHS&S Manager	Time frames for required training specified on the training matrix will be put on a calendar by the EHS&S Manager by xx/xx/xxxx. Training will be listed by session, on a specified day of the month and incorporate who is to attend the training to ensure that all required training is performed on time.	XX/XX/XXXX
No specific list of stakeholders.	XX/XX/XXXX	MS Management Team which includes the EHS&S Manager, Plant Manager, HR Director, Customer Service Manager and Plant Engineer	A list of internal and external stakeholders will be created by the MS Management Team before the end of the year, which will include employees, customers, suppliers/vendors, contractors, local agencies/authorities, and neighbors in the community surrounding our facility.	XX/XX/XXXX

Records

EHS&S records needed to document verification of the CSMS must be identified. The methods for record retention, retrieval, residency and removal of each document must be established.

The purpose of record management and maintenance is to demonstrate the facility is implementing the CSMS as designed. While records have value internally, the facility may need to provide records to external stakeholders (such as customers, a registrar, regulatory agencies or the public), as evidence of CSMS implementation.

Recordkeeping is a critical component of the CSMS. It provides evidence of compliance with regulatory requirements, supports internal and external audits, and demonstrates the facility's commitment to continuous improvement. Proper recordkeeping ensures traceability, accountability, and transparency across all elements of the ChemStewards program.

If a facility has an existing management system, there should already be a process or method in place for managing and maintaining records. This process can be adapted for CSMS purposes. An example of a records maintenance procedure is provided at the end of this section.

Types of records that should be maintained include, but are not limited to, the following:

- Legal, regulatory, and other code requirements
- Results of hazard identification and risk assessment
- Reports on progress towards meeting objectives and targets
- Permits, licenses, and other sanctions
- Training records
- CSMS internal audit reports
- Regulatory compliance audit reports
- Reports of identified non-conformances
- Corrective/preventive action plans and tracking data
- Emergency response (e.g., hazardous material spills, fires, other incident reports)
- Security-related records
- Communications with customers, suppliers, contractors, and other external parties, pertaining to the CSMS elements
- Results of management reviews
- Measurement and monitoring data
- Maintenance records
- Equipment calibration records

Methods of Record Retention, Retrieval, Residency, and Removal

Effective record management requires clear processes for retention, retrieval, residency, and removal:

Retention:

- Define retention periods based on regulatory requirements and company policy.
- Maintain records for the duration specified by law or internal standards.

Retrieval:

- Ensure records are easily accessible through a structured filing system or electronic database.
- Implement search functionality for quick retrieval.

Residency:

- Store records in secure locations, whether physical (locked cabinets) or digital (secure servers with restricted access).
- Ensure compliance with data residency requirements.

Removal:

- Establish procedures for timely and secure disposal of obsolete records.
- Shred physical documents and permanently delete electronic files after retention periods expire.
- Maintain a log of disposed records for audit purposes.

Glossary of Terms & Acronyms

Each industry creates and uses its own language to communicate commonly used terms and concepts. The following is a list of commonly used management system terms used in the module. Acronyms are shown in parenthesis next to the term followed by the definition.

Corrective/Preventive Action: An action taken to address, rectify and/or prevent a deficiency or noncompliance with guidelines, standards or regulations.

Management System (MS): An organized set of interrelated policies, procedures or practices designed and implemented by an organization to support specific operational goals.

Non-Conformance: Operations, activities, processes, products and incidents that do not conform with specified requirements, regulations or guidelines.

Example 1: Non-Conformance & Corrective/Preventive Action Procedure

Company Logo: Company Name: Subject: NON-CONFORMANCE AND CORRECTIVE/PREVENTIVE ACTION PROCEDURE	Page _ of _ Procedure #
--	--

APPLICATION

This procedure applies to employees of [Company] at the [Location] facility.

PURPOSE

To ensure that actual or potential non-conformances in the CSMS are corrected and do not reoccur.

DEFINITIONS

Corrective/Preventive Action Team – A facility team that may consist of the EHS&S Manager/Coordinator, Production Manager, Engineer, Maintenance Supervisor and other employees as appropriate.

Quorum - At least 2 of the members of the Corrective/Preventive Action Team that can make necessary decisions to carry out the work of the team.

Non-conformance - A condition that has significant EHS&S consequences and could be detrimental to the CSMS [e.g., a systems issue; an effect on the regulatory/permit compliance; or an effect on the environment, employee safety, and/or facility security].

Corrective/Preventative Action – Determination of immediate corrective action needed to eliminate the cause or minimize the impact of non-conformances, the investigation of the cause [which may include the use of operational and EHS&S records as appropriate] and the initiation of action to prevent recurrence via application of controls and/or changes (e.g., to procedures, equipment, training).

PROCEDURE

1.0 Responsibilities

- 1.1 Senior management are responsible for the effective implementation of non-conformance and corrective actions at the facility. Senior management will approve the procedure, will participate in the review/revision of the procedure when appropriate, and will be part of the Corrective/Preventive Action Team.

- 1.2 Managers/Supervisors will be responsible for the effective implementation of the procedure, ensure that appropriate training is presented to the employees within their departments, and will be part of the Corrective/Preventive Action Team.
 - 1.3 EHS&S Manager/Coordinator will be responsible for the development/ maintenance of the written procedure and will lead the Corrective/Preventive Action Team.
 - 1.4 Human Resources shall be responsible for maintaining training records of employees on the procedure. Records for specific training on incident/accident investigation will be maintained by the EHS&S department.
 - 1.5 Each employee will be responsible for following the procedure and have the authority to act to minimize any potential significant occurrence.
- 2.0 Non-conformance Identification
- 1.1 Methods for determining non-conformances include inspections, audits, management reviews, permit/compliance review, observations, input from employees or other stakeholders and monitoring/measurement results.
 - 1.2 Identified non-conformances will be documented, investigated for root cause, and corrected. The EHS&S Manager/Coordinator will ensure corrective/preventative actions are taken, documented, and that appropriate individuals are assigned to the actions.
 - 1.3 Repeated non-conformances that occur within the facility will be investigated by the Corrective/Preventive Action Team.
- 2.0 Corrective/Preventive Actions
- 2.1 The Corrective/Preventive Action Team will meet at least quarterly to review EHS&S non-conformance trends.
 - 2.2 Team meeting agenda for the review will be based on the following input:
 - Results of inspections or audits including no findings, good management practices and non-conformances
 - Employee observations or complaints
 - Environmental, safety, or security non-conformances with permit/regulatory requirements
 - Input on unsolved or potential issues
 - Input on potential problems
 - Open Corrective/Preventive Action Reports
 - Management Review directive
 - Excursions identified in monitoring and measurement
 - Stakeholder complaints (e.g., community or customer)

- 2.3 The Corrective/Preventive Action Team will determine the necessary actions to correct and prevent occurrence or re-occurrence of a non-conformance.
 - 2.3.1 A Corrective/Preventive Action Report will be generated.
 - 2.3.2 Actions taken will be entered into a log [action plan] and tracked.
 - 2.3.3 Individual assigned responsibility for implementation will notify the EHS&S Manager/Coordinator upon completion of the required action.
 - 2.3.4 Action will be closed out if it has been satisfactorily addressed. If the action plan does not resolve the non-conformance, the issue will be sent to the Corrective/Preventive Action Team for further study and new resolution.
- 2.4 Meeting minutes will be kept to document the decisions, actions, and assignments made. Attendance will be included in the minutes.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

Example 3: Records Maintenance Procedure

Company Logo: Company Name: Subject: RECORDS MAINTENANCE PROCEDURE	Page _ of _ Procedure #
---	--

APPLICATION

This procedure applies to employees of [company] at the [location] facility.

PURPOSE

The procedure establishes the ongoing process to identify, maintain and dispose of applicable CSMS records.

DEFINITIONS

- **CSMS Records** - Documents that demonstrate achievement of the required environmental, health & safety and security control and used to verify the effective operation of the EHS&S management system.

PROCEDURE

1.0 Responsibilities

- 1.1 Senior management for the facility will be responsible for implementing the actions for records maintenance.
- 1.2 The EHS&S Manager/Coordinator will perform the following actions:
 - 1.2.1 Establish requirements for control and retention of EHS&S records
 - 1.2.2 Review records to ensure compliance to all federal, state and local regulations
 - 1.2.3 Maintain a “Master List” of EHS&S records pertaining to identification and traceability of records associated with the CSMS
 - 1.2.4 Collect, index and retain appropriate records
- 1.3 Managers/Supervisors will be responsible for ensuring that employees are appropriately trained on the procedure.

2.0 Storage

- 2.1 Each department will maintain the appropriate records in a manner that is readily accessible.
- 2.2 Documents must be filed in a timely manner.
- 2.3 All records must have a manager's approval prior to removal from its location.
- 2.4 The individual that removed the document is responsible for ensuring that it is replaced into the original location.
- 2.5 Documents requested by outside sources must have the approval of senior management prior to distribution.

3.0 Disposal of Records

- 3.1 Records will be disposed of after the appropriate retention period.
- 3.2 Each department is responsible for disposal of obsolete records as listed by the Document Retention Procedure.
- 3.3 Records, with the exception of those with regulated retention times, will be disposed of once per year at the end of the calendar year in accordance with the company's records retention system.
- 3.4 All EHS&S paper documents will be shredded upon expiration of storage time.
- 3.5 Records with long retention periods such as SDSs may be archived.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

ChemStewards® Management System

Chapter 6 [Check/Act]

Developed by

**Society of Chemical
Manufacturers and Affiliates
(SOCMA)**



TABLE OF CONTENTS

[Check/Act]

Internal Audits	page 1
Management Review	page 5
Glossary of Terms and Acronyms	page 7
Example 1- Internal Audits Procedure	page 8
Example 2- Management Review Procedure	page 10

Internal Audits

Internal auditing involves regulatory compliance audits/inspections and internal management system audits for the CSMS. Internal management system audits evaluate how well the organization is implementing its CSMS through procedures, practices, systems and work instructions. Regulatory compliance audits and inspections compare the facility's regulatory performance against the requirements embodied in the EHS&S laws and regulations that apply to the site. Both internal management system and regulatory compliance audits need to be conducted to give important feedback.

The skill sets for auditing regulatory compliance and management systems are similar, the focus is different. The following tables indicate several important distinctions between the two internal audits.

Table 1: Regulatory Compliance versus Management System Audits

Regulatory Compliance Audits and Inspections	Management System Audits
Driven by Legal Requirements	Driven by Business Requirements
Event Centered	Systems Centered
Threshold Standards	Continuous Improvement
Media Focused	Cross Media
Operations Constrained	Operational Solutions
Pollution Control	Pollution Prevention
Goal of Zero Violations	Goal of Zero EHS&S Incidents
Occurrence Response	Occurrence Prevention

Table 2: Auditing Differences between Regulatory Compliance and Management Systems

Audit	Auditor Skill	Focus	Ability For Verification
Regulatory Compliance Audits/Inspections	Regulatory and Industry Knowledge	Regulatory Compliance	Regulatory basis
Management System Audits	Procedural Knowledge	Effectiveness of EHS&S Program Integration into Business Procedures	Procedural basis

Once an organization has established its CSMS, verifying implementation is critical. To continually improve a CSMS, facility staff must actively seek out deficiencies. Periodic internal CSMS audits will establish if all program requirements are being carried out in the appropriate manner.

To conduct internal CSMS audits, trained EHS&S auditors are needed. Auditor training should be conducted as soon as possible and with regular refresher training as the CSMS is implemented. If a facility has implemented an equivalent standard, such as ISO 9001/14001/45001, consider using your internal ISO auditors as part of the CSMS internal auditing team.

Alternatively, a facility may wish to employ its EHS&S personnel to conduct internal CSMS audits, taking care to have these individuals audit those areas for which they are not directly responsible. It is also an option to hire third party auditors to carry out internal CSMS audits.

All elements of the CSMS need to be audited. The facility may accomplish this in one or several audits. It is generally recommended to perform multiple small audits to provide employees with more opportunities to discuss the management system and learn from the auditors. Table 3 presents an example of a CSMS internal audit schedule.

When performing internal CSMS audits, the auditors should verify conformance with the organization's policy, procedures, practices, systems and work instructions. As time allows, it may be beneficial to look for ways to improve or streamline the management system. The following sources can be used for the internal CSMS audit:

- Interviews
- Document review
- Observation of work practices compared to the CSMS procedures and work instructions.

TABLE 3: Example of a CSMS Internal Audit Schedule

Month	Policy	Hazards and Risk	Legal & Other EHS&S Requirements	Objectives and Targets	Action Plans	Responsibilities & Accountabilities	Training, Awareness & Competency	Communication	Management System Documentation	Operational Control	Emergency Preparedness and Emergency Response	Monitoring and Measurement	Non-conformance and Corrective/Preventive Actions	Records	Internal Audits-Compliance and MS	Management Review
January	X															
February					X									X	X	
March									X							
April						X										
May			X													
June										X						
July												X				
August				X												
September											X					
October													X			
November		X														
December								X								X

Senior Management may use the results from the CSMS audits to identify trends or patterns of concern. The organization must also ensure that identified system non-conformances are rectified in a set time period, and that the corrective actions are documented. Further, corrective actions must be effective to prevent reoccurrences.

It is recommended that the site perform regulatory audits and inspections under the CSMS. This type of auditing requires special skills and detailed knowledge of EHS&S regulations.

To ensure that the trained internal auditors are independent of the areas or elements to be audited, some facilities use a corporate auditor or team, while some use “guest auditors” from other facilities or outside resources (e.g., consultants) to audit for compliance. When this occurs, these guest auditors should be teamed with site auditors to promote collaboration and provide cross functional training. Audits conducted solely by guest auditors are not considered internal regulatory audits and inspections.

If a facility conducts regulatory compliance audits internally (i.e., with its own personnel), it is recommended that the facility develop a comprehensive checklist of up to date EHS&S regulations that apply to the facility. It is recommended that the facility have its auditors inspect issues with which they are not directly involved on a day-to-day basis.

The organization may consider involving an attorney to manage the audit results in a confidential manner since there can be substantial legal exposure associated with the results of a regulatory compliance audit. The legal exposure comes from documenting the presence of violations of federal, state or local regulations. The legal complications are heightened if the violations are not promptly resolved.

Important considerations to keep in mind for CSMS internal audits:

- Focus CSMS regulatory and management system internal audits on objective evidence of conformance/non-conformance [e.g., documented records, observed non-conformances].
- Internal auditors should discuss deficiencies with the individuals who work in the area.
- Train multiple auditors to perform CSMS internal audits. Training can be delivered through external accredited courses or internal facility-sponsored programs. For external resources, consider consulting Exemplar Global for internationally recognized auditor certifications and the Institute of Internal Auditors (IIA) for EHS auditing credentials. Specialized providers such as ASQ and industry-specific trainers (e.g., RC14001/RCMS courses) also offer lead auditor training aligned with ISO and regulatory standards.
- Communicate the audit scope and schedule with the individuals in the areas to be inspected.
- The internal auditors should not be responsible for the day-to-day performance of the areas/elements to be audited.
- Internal auditors should document improvement opportunities if applicable.

Management Review

The purpose of the management review is to ensure the effectiveness and continual improvement of the CSMS. It should provide leadership with a structured opportunity to evaluate system performance, identify areas for enhancement, and confirm alignment with organizational objectives. A key agenda item should include the results of internal audits conducted since the previous review, as these findings offer critical insights into compliance, process efficiency, and opportunities for corrective or preventive actions. The review should also demonstrate proactive risk management, integrate ESG principles into decision-making, and leverage data driven insights to support strategic improvements.

The scope and frequency of the review depends upon the size and complexity of the facility along with other factors that are relevant to each organization. To maintain continual improvement, suitability, and effectiveness of the CSMS, and thereby its performance, the facility's senior management should review and evaluate the CSMS at defined intervals, such as quarterly or semi-annually. The management review must be conducted at least annually.

Scope of the Management Review

The scope of the management review should be comprehensive, though not all elements of your EHS&S need to be reviewed at once. The review process may take place over a period of time.

Review the policy, objectives, and procedures by the level of management that defines them. The following list of items may be included in the management review meeting:

- Results from internal CSMS audits and compliance audits
- The extent to which objectives and targets have been met
- Results of monitoring and measurement
- The continuing suitability adequacy, and effectiveness of the EHS&S and CSMS in relation to changing conditions, risks, and stakeholder expectations
- Concerns among relevant interested stakeholders
- Amount and type of training occurring
- Number and nature of non-conformances and corrective/preventive actions identified and resolved
- Evaluation of risks and opportunities identified since the last review and their impact on objectives
- Integration of Environmental, Social, and Governance (ESG) principles into system objectives and performance
- Assessment of data quality and analytics used for decision-making, including digital tools and dashboards
- Review of progress on sustainability and climate related commitments, where applicable
- Consideration of emerging regulatory requirements and global reporting standards (e.g., ESG disclosures)

Questions for Senior Management to Consider During the Management Review

- Is the EHS&S policy still relevant to the site?
- Are roles and responsibilities clear and make sense?
- Are resources being applied appropriately?

- Are the facility's regulatory and EHS&S reporting obligations being met?
- Are the procedures clear and adequate? Are others needed? Should some be eliminated?
- What changes in materials, products, or services have occurred? Have the changes had any effect on the CSMS? Is the facility CSMS still effective?
- How effective are the measurement and assessment systems?
- Can new measurable performance objectives be set?
- Do changes in laws or regulations require the facility to change some of its approaches?
- How effectively are risks and opportunities being managed across the CSMS?
- Is ESG integration evident in objectives, targets, and performance metrics?
- Are data-driven insights being used to improve decision-making and resource allocation?
- Do sustainability and climate-related goals align with corporate strategy and stakeholder expectations?
- Are digital tools and technologies adequately supporting monitoring, reporting, and continuous improvement?
- What stakeholder concerns have been raised since the last review?
- What information from the EHS&S department should be shared with outside stakeholders?
- What else can be done to improve the management system?

Plan for Continuous Improvement

The facility should create a continual improvement plan and check its progress at regular intervals between management reviews. Assign action items for follow-up and schedule the next management review. The management review meeting minutes can be used to document your management review and to assign action items for follow up.

Management reviews also offer an opportunity to keep your CSMS efficient and cost effective. For example, some facilities have found that certain procedures and work instructions initially put in place were not needed to achieve their objectives or to control key processes. If EHS&S procedures and other activities do not add value, eliminate them.

Key Questions in a Management Review Meeting

- Is the system working (i.e., is it suitable, adequate, and effective, given our needs)?
- How can it be improved?

Glossary of Terms & Acronyms

Each industry creates and uses its own “language” to communicate commonly used terms and concepts. The following is a list of commonly used management system terms used in the module. Acronyms are shown in parenthesis next to the term followed by the definition.

Lead Auditor: The trained and knowledgeable individual who is responsible for the audit team and/or responsible for performing a CSMS audit.

Audit Team: Trained personnel conducting CSMS audits under the direction of a Lead Auditor.

ChemStewards Management System (CSMS): A continuous improvement cycle that builds upon planning, implementing, reviewing and improving the actions that an organization takes to meet its EHS&S obligations.

Internal CSMS Audit: A process of objectively obtaining and evaluating evidence to determine whether an organization’s CSMS is operating as intended.

CSMS Policy/Procedure: A written document that summarizes an organization’s direction for achieving CSMS goals; intentions and principles in relation to its overall EHS&S performance, which provides a framework for action and a backup for its EHS&S objectives and targets.

Management Review: Periodic review of the CSMS to ensure effectiveness and continuous improvement.

Management System (MS): An organized set of interrelated policies, procedures and practices designed and developed by an organization to support specific operational goals.

Example 1: Internal Audits Procedure

Company Logo: Company Name: Subject: INTERNAL AUDITS PROCEDURE	Page _ of _ Procedure #
---	--

APPLICATION

This procedure applies to employees of [company] at the [location] facility.

PURPOSE

To ensure that the CSMS is suitable, adequate and effective as established.

DEFINITIONS

- Non-Conformance - Operations, activities, practices, processes, products and incidents that do not conform to the specified requirements.
- Lead Auditor - The trained and knowledgeable individual who is responsible for the audit team and/or in charge of performing the CSMS audit.
- Audit Schedule - The timetable, matrix or other documentation for performing CSMS audits on each of the elements.

PROCEDURE

1.0 Audit Schedule

An audit schedule or a guideline for each element to be audited over a 12 month period will be established. The audits will be completed within a two week period per element.

2.0 Internal Auditor

The internal auditors will be trained on the CSMS in addition to auditing techniques. Auditors must be independent of the area/element being audited.

3.0 Internal CSMS Audits

The lead auditor will plan and assign all audits for the facility at the beginning of the first quarter. The lead auditor will notify the audit team when an element is scheduled, set up the audit and ensure that the audit is completed each month.

- A report will be generated by the lead auditor for each audit. Observations of non-conformances or opportunities for improvements will be noted in the report and an action plan will be established if applicable.
- The audit report will be forwarded to the department audited for review.
- Every non-conformance identified will be rectified by the applicable department manager or others as assigned by the action plan.
- When the non-conformance has been corrected, the department manager will notify the lead auditor.
- The internal audit team will review changes to ensure conformance and close out the audit report. If the audit findings show additional changes are needed, a new follow-up date will be set.
- The lead auditor will review changes and close out the report when changes are satisfactorily completed. Results of internal audits will be reviewed with management as part of a Management Review.

4.0 Responsibilities

4.1 Senior Management will be responsible for reviewing all audit reports and action plans.

4.2 EHS&S Manager/Coordinator will be responsible for establishing the procedure and audit team.

4.3 The Audit Team will be responsible for implementing the procedure.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

Example 2: Management Review Procedure

Company Logo: Company Name: Subject: MANAGEMENT REVIEW PROCEDURE	Page _ of _ Procedure #
---	--

APPLICATION

This procedure applies to employees of [company] at the [location] facility.

PURPOSE

To define the process for conducting a management review of the facility's CSMS internal audit and regulatory compliance audits.

DEFINITIONS

- Management Review Team – Facility cross functional team that consists of Plant Engineer, EHS&S Manager/Coordinator, Production Manager, Plant Manager and Maintenance Supervisor, designated to conduct periodic reviews of the CSMS to ensure its effectiveness and continuous improvement.
- Internal Audit Team – Trained personnel conducting internal CSMS audits under the direction of the lead auditor.
- Lead Auditor - The trained and knowledgeable individual responsible for the audit team and/or in charge of performing the CSMS audit.

PROCEDURE

- 1.0 Lead Auditor and Audit Team
 - 1.1 Submits a summary of the CSMS internal audit findings, recommendations and corrective actions to the Management Review Team.
 - 1.2 Submits a summary of findings, recommendations and corrective actions from regulatory compliance audits conducted since the last Management Review meeting.
 - 1.3 Prepares an overall summary of the effectiveness of the CSMS to facilitate the Management Review Team's review and evaluation during the review meeting.

- 1.4 Arranges the Management Review meeting and prepares the agenda for discussion.
 - 1.5 Ensures that the CSMS management review meeting is documented for issues raised and decisions made during the session. Updates the Management Review Team as action items are completed.
 - 1.6 Maintains the CSMS management review records for a minimum of two (2) years
- 2.0 Management Review Team
- 2.1 Evaluates the facility's CS management system performance by reviewing:
 - Internal CSMS audit results
 - Non-Conformance and Corrective/Preventive Action requests, referrals and results
 - Results of compliance with legal requirements via regulatory compliance audits
 - EHS&S Policy
 - EHS&S objectives and targets
 - Training status
 - Results of monitoring and measurement
 - Stakeholder input
 - 2.2 Identifies areas for improvement and establishes an overall action plan.
 - 2.3 Must have a quorum at the management review meeting that would include at least three members of the Management Review Team along with the Plant Manager and the EHS&S Manager/Coordinator.
 - 2.4 Ensures that corrective actions and improvements are implemented according to an agreed action plan.

ISSUE DATE	REPLACES	Approved By
--/--/--	--/--/--	

ChemStewards[®] Management System

Chapter 7 [Supplementary]

Developed by

**Society of Chemical
Manufacturers and Affiliates
(SOCMA)**



TABLE OF CONTENTS

[Supplementary]

Pollution Prevention	page 1
OSHA Requirements	page 6
Product Stewardship	page 17
Glossary of Terms and Acronyms	page 18
SOCMA Member's Best Practices	page 19

Purpose

This chapter serves to help member chemical companies understand the fundamentals of pollution prevention, OSHA compliance, and product stewardship. By emphasizing pollution prevention, this module provides practical strategies that may reduce a facility's regulatory compliance burden.

Pollution Prevention

Pollution prevention, while not explicitly covered by the CSMS, is implied throughout the program and is a Core Principle. Significantly, ISO14001 requires the environmental, health, and safety policy include a commitment to prevention of pollution, which has been interpreted for ISO14001 to mean pollution prevention. In addition, the ISO14001 operational control clause indicates that programs and procedures addressing pollution prevention must be established and maintained. It is hoped that this brief discussion of pollution prevention will help SOCMA companies decide how to take advantage of pollution prevention opportunities.

By applying the principles of pollution prevention, a facility may improve their efficiency or yield and may also reduce internal costs, emissions and waste in their process.

This section reviews the concepts associated with:

- 1. The Pollution Prevention Act**
- 2. Pollution Review and Assessment**
- 3. Pollution Prevention Tools**
- 4. Pollution Prevention Programs**
- 5. Pollution Prevention Grants**
- 6. Pollution Prevention Benefits**

This review of pollution prevention issues will better enable a company to determine appropriate pollution prevention options for its facility.

1. Pollution Prevention Act

The Pollution Prevention Act establishes the national policy that pollution should be prevented or reduced at the source whenever feasible. Pollution prevention entails reducing or eliminating waste at the source by modifying production processes, promoting the use of non-toxic or less-toxic substances, implementing conservation techniques, and re-using materials rather than allowing them to become part of a waste stream. The USEPA has programs designed to (1) educate manufacturers on industrial processes that prevent pollution by saving energy, (2) encourage environmentally preferable purchasing, and (3) provide technical assistance to state agencies and businesses.

USEPA is incorporating pollution prevention into programs that encourage environmentally preferable purchasing and corporate eco-efficiency. Pollution prevention is a building block for private sector environmental performance and sustainability. *For more general information about P2, consider the following websites:*

- [Pollution Prevention \(P2\) | US EPA](#)
- [P2 Technical Assistance Providers | US EPA](#)

2. Pollution Prevention Review and Assessment

A logical time to review and assess a facility's pollution prevention options is during the hazard identification/risk assessment. This is where, in developing a CSMS, a facility identifies the raw materials it uses, wastes generated, emissions, and wastewater discharges and assesses the risks involved. During this stage, it is advisable to examine where wastes, emissions and discharges can be prevented from occurring by using different raw materials, different processes, etc.

3. Pollution Prevention Tools

As interest in pollution prevention grows and facilities look to move beyond the "low-hanging fruit," it becomes increasingly important to find ways to evaluate the potential benefits of pollution prevention alternatives. Two such tools are Life Cycle Analysis (LCA) and Total Cost Assessment (TCA).

LCA generally focuses on the environmental hazards of a specific product over its lifetime, although it could be applied to processes or services. LCA looks at each stage, from raw material through production, use, and disposal. Inputs to the analysis include energy use, waste generation, emissions, and releases from each stage. By performing a Life Cycle Analysis, a facility will have a better understanding of the total cost associated with its decisions. *For more information on LCA, refer to the Society of Environmental Toxicology & Chemistry Website: [Life Cycle Assessment](#).*

TCA focuses on the total costs of a project or product, including environmental costs, which many assessment methods do not include. This is often done to support evaluations of process or product changes over the long term. For example, TCA might be used to assess the benefits and costs of continuing to use a VOC-based process versus those of using a water-based process for the same purpose. By performing a Total Cost Assessment, a facility will ensure all costs have been factored into its final decision. *For more information on TCA, refer to the EPA's Environmental Accounting Project Website [Chapter 2 - Cost Estimation: Concepts and Methodology | US EPA](#)*

4. Pollution Prevention Programs

The following is a list of programs that are sponsored by USEPA. If interested in any of these programs, contact the USEPA directly for help and possible grant money for review and implementation at your facility.

- **Pollution Prevention (P2) Grant Programs**

EPA offers several grant programs to help businesses adopt source reduction practices that reduce pollutants before recycling, treatment, or disposal. These grants support technical assistance and focus on environmental justice, safer products, and greenhouse gas reductions.

[Learn more about P2 grants](#)

- **Green Chemistry & Design for the Environment**

Green Chemistry promotes the design of chemical products and processes that reduce or eliminate hazardous substances. EPA's Green Chemistry Challenge Awards recognize innovations that prevent pollution at the molecular level.

[Explore Green Chemistry](#)

- **Environmentally Preferable Purchasing (EPP)**

The EPP Program helps federal agencies and other organizations identify and procure products and services that have a reduced environmental impact. It provides recommendations for specifications, standards, and ecolabels to encourage sustainable purchasing.

[Learn about EPP \[epa.gov\]](#)

- **P2 Finance and Environmental Accounting**

EPA provides resources to help businesses finance pollution prevention projects and adopt Total Cost Assessment (TCA) methods to capture full economic and environmental benefits.

[Learn about P2 Financing](#)

[Environmental Accounting Project](#)

- **Greenhouse Gas Reduction Initiatives**

EPA supports programs to reduce greenhouse gas emissions through energy efficiency, renewable energy, and waste reduction strategies. Key initiatives include ENERGY STAR, Green Power Partnership, and Climate Pollution Reduction Grants.

[Explore GHG Reduction Strategies](#)

5. Pollution Prevention Grants

Grants may be available under the authority of the Pollution Prevention Act of 1990.

See also [Pollution Prevention Grants Overview | US EPA](#).

6. Pollution Prevention Benefits

Pollution prevention practices can improve the bottom line through business reductions in the following costs: raw materials and energy; treatment and disposal; and associated labor. Many pollution prevention strategies, such as substituting toxic materials with less toxic or non-toxic alternatives, are simple and inexpensive.

Pollution prevention practices have the potential to reduce or eliminate treatment, disposal, and associated labor costs.

- Wildlife and habitat damage
- Property devaluation
- Environmental remediation costs
- Civil and criminal fines
- Permit fees
- Insurance costs
- Process disruption
- Down time

Other key P2 benefits can include:

Enhanced Public Image- Consumers more favorably view businesses that adopt and practice P2 strategies, and the marketing of these practices can increase profits.

Increased Productivity and Efficiency- Pollution prevention assessments help organizations identify opportunities to decrease raw material usage, eliminate unnecessary operations, increase throughput, reduce off-specification product generation, and improve yields.

Reduced Regulatory Burden- Improving environmental performance and reaching performance goals that go beyond compliance are ways to reduce regulatory burdens. The USEPA Performance Track allows for individual company needs to be identified and helps the companies implement their initiatives. Also many states are initiating new programs to help companies who can demonstrate superior environmental performance to reduce their regulatory burden in ways that are negotiated between the companies and the state environmental agencies.

Decreased Liability- Handling hazardous and toxic materials brings the potential for high liability should an accident occur. Organizations that substitute safer alternatives for toxic materials reduce the liability and high costs associated with unsafe environmental practices. Examples of the benefits of reducing liability through pollution prevention are: reductions in insurance premiums, reductions in the need to purchase Personal Protective Equipment (PPE), elimination of pulmonary testing and associated inherent risks from handling, etc.

Improved Environmental and Health Quality- Pollution prevention methods can help reduce the air, water, and land pollution that results from waste generation, treatment, and disposal, reduce worker and neighbor health risks and the environmental risks associated with pollutant emissions, and conserve natural resources and landfill space.

OSHA Requirements

This section on OSHA requirements provides an overview of key regulatory obligations. Its purpose is to help facilities assess their current level of compliance against established standards and fulfill their Chemical Safety Management System (CSMS) responsibilities for meeting legal and other requirements. Many facilities continue to face challenges in achieving full compliance with OSHA regulations, making this review an essential step toward improving safety and regulatory performance.

Basic OSHA Requirements List: [Note that the following list is not all inclusive of OSHA regulations under 29CFR1910]

• Noise Exposure/Hearing Conservation	• Hot Work	• Machine Guarding
• Walking/ Working Surfaces	• Hoist, Chains and Slings	• Electrical Safety Program
• Powered Industrial Vehicles	• Personal Protective Equipment	• Chemical Hygiene Plan
• Confined Space	• Ladder Inspection	• Eye Wash/Safety Shower Program
• Fall Protection	• Blood-Borne Pathogens	• First Aid
• Respirator Protection	• Process Safety Management	• Hazard Communication
• Overhead Cranes	• Lockout/Tagout	

Information reviewed will help a facility to understand what meeting federal OSHA requirements means. Each facility needs to perform a comprehensive review of all OSHA requirements, identifying areas of compliance/non-compliance and rectifying all non-compliance issues. This should be performed prior to CSMS certification. The list is meant to supply a strong, though not comprehensive, sample of OSHA requirements that apply to most chemical sites. The following set of questions is designed to help evaluate your facility's compliance with key OSHA regulatory requirements that may apply.

1. Noise Exposure/Hearing Conservation Program [29 CFR 1910.95]

- a. Has noise exposure testing been completed at the work site?
- b. Are employees potentially exposed to excessive levels of noise?
- c. Have Noise surveys been conducted to verify noise levels are below 85 dB averaged over 8 hours?
- d. Do the results exceed PEL or AL thresholds from the OSHA Standards for General Industry?
- e. Is there a hearing training program for employees exposed to more than an 8-hour time weighted average of 85 decibels?

- f. Has a written Hearing Conservation Program been completed and maintained when noise levels exceed the Action Level (AL)?
- g. Is there an audiometric testing program if exposure levels exceed an 8-hour time weighted average of 85 decibels?
- h. Have employees who are required to have an annual audiogram received notification letters and follow-up instructions based on OSHA criteria?
- i. When noise levels exceed the Permissible Exposure Level (PEL), is the use of hearing protection required?
- j. Is annual refresher training provided for employees who continue to be exposed to tasks above the AL?
- k. Are records of noise survey results maintained for a minimum of two years and audiometric testing results maintained for the duration of employment of the affected employee?
- l. Have results of noise abatement efforts been recorded in accordance with good business practices?
- m. Are locations where noise is consistently above the PEL been labeled as follows: "Hearing Protection Required in this Area"?
- n. Is there a facility requirement for recordkeeping on all exposure measurements?

2. Walking/ Working Surfaces [29 CFR 1910.22]

- a. Does your facility have a procedure for walking/working surfaces?
- b. Are there guidelines for guarding floor and wall openings and holes?
- c. Are stairway railings, toe boards, cover specifications and guards defined?
- d. Are fixed industrial stairs requirements defined?

3. Powered Industrial Vehicles [29 CFR 1910.178]

- a. Are powered trucks used at the facility?
- b. Are all powered vehicles designed and constructed according to the requirements of ANSI B56.1 (note that a rule update is in progress for this requirement)?
- c. Where a truck is equipped with a front-end attachment, is the attachment marked to show approximate weight of the truck and attachment combination and maximum elevation with load?
- d. Are modifications and additions, which affect capacity and safe operation, not performed without manufacturer's written consent?
- e. Are all fork trucks that lift loads where the type of load presents a hazard, equipped with a backrest extension?
- f. Are the installations for battery charging located in areas that are designated for that purpose?
- g. Does the facility provide for flushing and neutralizing of spilled electrolyte?
- h. Does the facility provide protection for charging apparatus from damage by trucks?
- i. Does the facility ensure carbon monoxide concentrations as a result of truck operations do not exceed Permissible Exposure limits?
- j. Is a powered industrial vehicle checklist used each day to verify safe operation of industrial vehicles prior to use?

- k. Is the content of the training program appropriate for the equipment operated and the work performed?
- l. Is training repeated at least every three years and as necessary to maintain required skills?
- m. Are employees allowed to ride on the forks or the sides of lift trucks?

4. Confined Space [29 CFR 1910.146] for General Industry

- a. Are confined spaces present at this facility?
- b. Is there a written program at the facility?
- c. Are entrances to all permit-required confined spaces labeled using the appropriate warning signs?
- d. Are confined spaces periodically re-evaluated to determine requirements for safe entry?
- e. Prior to entry into a permit required confined space, have provisions been made to:
 - i. Specify acceptable entry conditions;
 - ii. Provide each authorized employee the opportunity to observe any monitoring or testing of permit spaces;
 - iii. Isolate the permit space;
 - iv. Purge, inert, flush or ventilate permit space as necessary;
 - v. Provide barriers as necessary to protect entrants from external hazards; and
 - vi. Verify that conditions in the permit space are acceptable for entry throughout the duration of the entry?
- f. Is the confined space entry permit completed and all provisions met prior to entry?
- g. Is equipment used for permit-required confined space entry maintained and used properly by trained individuals?
- h. Before and during permit-required confined space entry, are conditions in the space properly tested and monitored?
- i. Is a confined space permit posted at the entrance to the confined space entry point?
- j. Are all confined space entry permits retained for at least one year after the completion of entry, as required by OSHA for program review and audit purposes?
- k. Are confined space entry training records maintained?
- l. Prior to entry into a permit-required confined space, are appropriate provisions made for emergency rescue service and have an agreement with the local agency in writing?
- m. Are contractors who are allowed to perform work that involves permit space entry advised of potential hazards and required to follow appropriate entry procedures?
- n. Has the facility conducted and documented an annual rescue drill for permit-required confined spaces to ensure the designated rescue team can respond effectively in an emergency?
- o. If site employees have been designated to provide permit space rescue and emergency services, has the facility conducted and documented an **annual rescue drill** for each type of permit-required confined space?
- p. Is the designated rescue team equipped, trained, and evaluated to ensure timely

- and effective response?
- q. Has the facility verified and documented the **response time and capability** of any off-site rescue service?
 - r. Is **continuous atmospheric monitoring** performed during entry, with alarms set for hazardous conditions?
 - s. Are instruments used for testing calibrated and maintained according to manufacturer specifications?
 - t. Is real time monitoring data accessible to entrants and attendants throughout the entry?
 - u. Are contractors provided with **written information** about confined space hazards, entry procedures, and rescue arrangements before work begins?
 - v. Has the facility established a process to **coordinate entry activities** when multiple employers are involved?
 - w. Are contractors required to confirm their own confined space program compliance and provide documentation before entry?

5. Fall Protection [29 CFR 1926.501]

- a. Are employees exposed to potential hazards that require the use of fall protection?
- b. Are employees who perform elevated work that is six or more feet above a lower work level protected from falling by use of a guardrail, safety net or personal fall arrest system?
- c. Has the facility developed and communicated a **rescue plan** for prompt rescue or self-rescue in the event of a fall?
- d. Where personal fall protection systems are used, does fall protection include a harness lanyard and a secure attachment point?
- e. Is the secure attachment point capable of supporting at least 5000 lbs. or twice the maximum load?
- f. Are all personal fall arrest systems equipped with **full-body harnesses** (not body belts) as required by OSHA?
- g. Where guardrails are used (in construction), are they built, installed and maintained properly?
- h. Where employees are engaged in leading edge work, precast concrete erection work or construction has a fall protection plan been set up and/or properly maintained?
- i. Are employees trained in the safe use and inspection of fall protection equipment before they are assigned to perform elevated work?
- j. Are fall protection systems and components **inspected before each use**, and removed from service if damaged or defective?
- k. Is the training documented in writing with all required elements including names, dates and trainer signature?
- l. Are employees trained by a **competent person** in the proper use, inspection, and limitations of fall protection systems?
- m. Are retraining sessions conducted when workplace conditions change or when deficiencies in fall protection use are observed?

6. Respiratory Protection [29 CFR 1910.134]

- a. Do employees at the facility use respirators?
- b. Are employees required to perform a user seal check each time they put on a tight-fitting respirator?
- c. If so, does the facility have a complete and up-to-date written Respirator Program?
- d. Are all respirators used at the facility NIOSH-approved and appropriate for the hazards present?
- e. Are employees who voluntarily use disposable respirators (dust masks or filtering face pieces) provided with the OSHA Appendix D information and instructed on proper use and limitations?
- f. Have employees who are required to use a respirator completed the OSHA Respirator Users Medical Questionnaire and received written authorization from a Professional Licensed Health Care Provider before being fitted for a respirator?
- g. Are individuals that are required to wear a respirator fit tested prior to initial use of the respirator to ensure a proper seal is achieved?
- h. Is fit testing repeated and documented annually?
- i. Are employees required to be clean-shaven in order to use a respirator?
- j. Are respirators cleaned, stored, and maintained according to OSHA and manufacturer requirements?
- k. Are respirators that are designated for emergency use, inspected at least monthly?
- l. Is respirator protection training repeated annually or when changes in potential exposures necessitate new training?
- m. Is a written record of each fit test maintained?
- n. Do the trained personnel responsible for ensuring that the respirator program is being properly implemented perform periodic employee observations?
- o. Is the respiratory protection program evaluated periodically to ensure effectiveness and compliance?
- p. Are the immediate supervisors of employees who use respirators trained in the program?

7. Overhead Cranes [29 CFR 1910.179]

- a. Do overhead cranes installed after 8/31/1971 meet the ANSI B30.2.0-1967 standard?
- b. Are the location requirements for cabs, foot walks and ladders defined?
- c. Are hoisting equipment requirements defined?
- d. Is hoisting equipment inspected prior to use?
- e. Are warning devices checked on a regular basis?
- f. Are maintenance requirements defined?
- g. Are maintenance records for overhead cranes stored per a defined time limit (typically for the life of the crane or until the next inspection)?
- h. Is the rated load of each crane and hoist plainly marked on both sides of the crane?
- i. Are operators designated and trained in accordance with OSHA and ASME requirements?
- j. Are warning devices (gong, horn, or visual signal) activated before bridge or trolley motion as required by OSHA?

8. Hot Work [29 CFR 1910.252]

- a. Does the company have a procedure to define requirements for Hot Work?
- b. Are fire and employee protection requirements outlined in the procedure?
- c. Does the company use a “Hot Work Permit”?
- d. Does the procedure require the fire watch to remain at the site for at least 30 minutes after hot work is completed (or longer if conditions warrant)?
- e. Is the hot work area inspected before issuing a permit to ensure combustible materials are removed or protected?
- f. Is suitable fire extinguishing equipment immediately available during hot work?
- g. Are employees assigned as fire watch trained and equipped to respond to fires?
- h. Is the hot work permit retained for documentation and review as required by OSHA?
- i. Are employees performing hot work trained in safe practices and emergency procedures?

9. Hoist, Chains and Slings [29 CFR 1910.179]

- a. Is hoisting equipment inspected prior to use?
- b. Does each sling have a permanently affixed, legible identification tag showing manufacturer name, rated load for each hitch type, angle, and number of legs?
- c. Are records of the most recent periodic inspection for alloy steel chain slings maintained and available for review? (OSHA requires documentation of the month of the last thorough inspection.)
- d. Are slings inspected by a competent person before each use and periodically, with the frequency based on service conditions?
- e. Are damaged or defective hoists, chains, or slings immediately removed from service and tagged as unusable?
- f. Is the rated load clearly marked on hoists and lifting devices as required by OSHA?

10. Personal Protective Equipment (PPE) [29 CFR 1910.132]

- a. Has the facility conducted and documented a PPE hazard assessment and certification as required by OSHA (including workplace evaluated, date, and certifier)?
- b. Does the company have a procedure defining PPE requirements?
- c. Does the procedure identify appropriate eye, face, hand, and body protection requirements?
- d. How do employees know when to wear the appropriate PPE?
- e. Is PPE inspected regularly for wear, damage, and proper function according to OSHA and manufacturer guidelines?
- f. Is defective or damaged PPE removed from service immediately?
- g. Is PPE properly fitted for each employee to ensure effective protection?
- h. Is PPE verified to meet OSHA and applicable ANSI/ASTM/NIOSH standards before purchase?
- i. Are employees included in the evaluation of PPE?
- j. What keeps the purchasing department from buying “non-tested” PPE based on lower cost?
- k. Are PPE requirements accessible to employees?
- l. Does the facility perform periodic PPE inspections to ensure that employees are

- wearing the appropriate equipment?
- m. Are employees trained on when PPE is necessary, how to properly don/doff, limitations, and care/maintenance of PPE?

11. Ladder Inspection (fixed) [29 CFR 1910.27]

- a. Does the company have a procedure defining requirements for ladder inspection?
- b. Is each ladder marked or labeled as needed for internal tracking and compliance with company policy as a best management practice?
- c. Are there work instructions informing an employee on what constitutes a ladder inspection?
- d. Are ladders with structural or other defects immediately tagged “Dangerous: Do Not Use” and removed from service until repaired or replaced?
- e. How are non-conforming ladders rendered non-usable?
- f. Do fixed ladders over 24 feet have an OSHA-compliant ladder safety system or personal fall arrest system installed?
- g. Are employees trained on proper ladder use, inspection, and fall protection requirements?

12. Blood-Borne Pathogens [29CFR 1910.1030]

- a. Are employees at your facility potentially exposed to blood or other potentially infectious substances?
- b. Does the facility have a written Exposure Control Plan?
- c. Are assigned employees offered the Hepatitis B vaccine?
- d. Are assigned employees who refuse the vaccine required to sign a declination form?
- e. Have employees with “occupational exposure” been provided with Blood borne Pathogens training?
- f. Does the facility maintain confidential medical records for each employee with occupational exposure, including Hepatitis B vaccination status, declination forms, and post-exposure evaluations, for the duration of employment plus 30 years?
- g. Is Bloodborne Pathogens training provided at initial assignment and at least annually thereafter, and updated when tasks or procedures change?
- h. Are training records maintained for at least three years from the date of training, including dates, content summary, trainer qualifications, and attendee names/job titles?

13. Process Safety Management (PSM) [29 CFR 1910.119]

- a. Does the facility have a procedure(s) defining the requirements of PSM?
- b. Are written operating procedures developed, implemented, and kept current for all covered processes?
- c. Has the facility conducted an initial Process Hazard Analysis and revalidated it at least every five years?
- d. Does the facility conduct and document a compliance audit of the PSM program at least every three years to verify all requirements are being met?
- e. Are employees’ part of the review process for PSM?
- f. Is a pre-startup safety review conducted for new or modified processes before

- introducing highly hazardous chemicals?
- g. Does the facility have written procedures for managing changes to processes, equipment, and procedures?
- h. Does the facility have an emergency action plan that addresses PSM-covered processes?<https://teamstersafety.org/wp-content/uploads/2019/11/processsafetymanagement.pdf>

14. Machine Guarding [29 CFR 1910.212]

- a. Does the facility have a written procedure defining the requirements for machine guarding?
- b. Does the facility check its machine guarding on all equipment within the plant?
- c. Does machine guarding prevent the operator from having any part of the body in the danger zone during the operating cycle, in compliance with OSHA requirements?
- d. Are machine guards constructed of materials strong enough to withstand normal use and prevent hazards, as required by OSHA?
- e. Is new equipment inspected prior to use to verify all guarding is complete?
- f. Are guards affixed to the machine where possible and secured elsewhere if attachment is not possible?
- g. Are guards designed so they do not create additional hazards or interfere with machine operation?
- h. Are point-of-operation guards provided for machines whose operation exposes employees to injury?
- i. Are machines anchored securely to prevent movement during operation?
- j. Does the facility procedure describe the distances guards are to be from point of danger?
- k. Does the procedure require reporting to OSHA within 8 hours for fatalities and within 24 hours for in-patient hospitalizations, amputations, or loss of an eye resulting from machine guarding incidents?
- l. Are employees trained on machine guarding requirements and safe operation procedures?

15. Electrical Safety Program [29 CFR 1910.303]

- a. Does the facility have a procedure defining Electrical Safety?
- b. Does the procedure address OSHA Subpart S requirements, including design standards (§1910.302–308), work practices (§1910.331–335), maintenance (§1910.361–380), and special equipment (§1910.381–398)? Does the procedure discuss proper PPE for electrical workers?
- c. Does the procedure require guarding of live parts operating at 50 volts or more to prevent accidental contact, as per §1910.303(g)(2)?
- d. Does the procedure include arc flash hazard analysis and specify PPE requirements consistent with OSHA and NFPA 70E guidance?
- e. Does the procedure require training for qualified and unqualified persons per §1910.332, including hazard recognition and safe work practices?
- f. Are electrical installations inspected and maintained to prevent deterioration and hazards as required by §1910.303(b)(6)?
- g. Does the procedure integrate electrical safety with lockout/tagout requirements under §1910.333 for de-energizing equipment before work?

16. Chemical Hygiene Plan [29 CFR 1910.1450]

- a. Does the facility engage in laboratory use of hazardous chemicals, making a Chemical Hygiene Plan mandatory under 29 CFR 1910.1450?
- b. Does the facility have a chemical hygiene plan?
- c. Does the Chemical Hygiene plan identify a Chemical Hygiene Officer?
- d. Is there a list of all chemicals on site?
- e. Does the facility have an SDS for each chemical identified?
- f. How does the facility dispose of obsolete chemicals?
- g. How is employee chemical exposure determined?
- h. Is the Chemical Hygiene Plan reviewed and updated at least annually and whenever conditions change?
- i. Are employees trained and kept informed about changes in the hazards of chemicals on site?

17. Eye Wash/Safety Shower Program [29 CFR 1910]

- a. Are eye wash/safety showers required within the facility?
- b. Are eyewash stations and safety showers located within 10 seconds (approximately 55 feet) of the hazard and on the same level, with unobstructed access?
- c. Where corrosive materials are present, are suitable facilities for quick drenching or flushing of the eyes and body provided within the work area?
- d. Can eyewash and shower units be activated in one second or less and remain in operation without requiring the user to hold controls?
- e. Are all eyewash and safety shower stations clearly identified with highly visible signage and located in well-lit areas? Are eye wash/safety showers inspected monthly?
- f. Are inspection checklists used?
- g. How are all eye wash/safety showers identified?
- h. Does the inspection checklist identify appropriate flow rate and temperature for water used?
- i. Does the inspection require all eye wash heads to be properly aligned?

18. First Aid [29 CFR 1910.151]

- a. Are first aid providers who have occupational exposure trained on bloodborne pathogens in accordance with 29 CFR 1910.1030?
- b. Is a first aid kit available and stocked with appropriate supplies?
- c. Do all designated first aid providers have a current certificate?
- d. Are all first aid providers trained on blood-borne pathogens?
- e. If more than 5 minutes is needed for outside medical assistance, has at least one employee from each shift been designated as the first aid provider?
- f. Has an assessment been made to determine if professional medical assistance can reach the facility within 5 minutes?

19. Hazard Communication [29 CFR 1910.1200]

- a. Are hazardous chemicals “defined by OSHA” stored or used by employees of

- the facility?
- b. Are Safety Data Sheets (SDSs) for chemicals no longer used maintained and stored for a minimum of 30 years?
 - c. Are SDSs obtained and reviewed prior to use of any chemical on site?
 - d. Does the facility have an accurate up-to-date written Hazard Communication Program?
 - e. Is a written inventory maintained to identify chemicals for which SDS have been collected?
 - f. Does Hazard Communications training occur and does the training discuss routine and non-routine tasks?
 - g. Are contractors informed of potential hazards from exposure to chemicals in the workplace?
 - h. Are all hazardous chemical containers labeled with product identifier, signal word, hazard statements, pictograms, precautionary statements, and supplier information as required by OSHA?
 - i. Is training repeated as necessary to maintain employee understanding?
 - j. Is training provided when new materials/chemicals are added to the process?
 - k. Are new employees provided initial training on Hazard Communication?

20. Lockout/Tagout [29 CFR 1910 147]

- a. Does the facility have a Lockout/Tagout procedure?
- b. Are Lockout/Tagout devices for all applications within the facility available for use?
- c. Does the procedure require verification of isolation and zero-energy state before servicing begins, as required by 1910.147(d)(6)?
- d. How do employees demonstrate the proper level of safety has been achieved during a Lockout/Tagout situation?
- e. Has each piece of equipment needing Lockout/Tagout work instructions been identified?
- f. Does each identified piece of equipment have specific work instructions outlining all Lockout/Tagout points and the number of locks required?
- g. Does the procedure identify what an employee is to do if another employee lock is currently attached to the Lockout/Tagout device?
- h. Does the procedure include provisions for group lockout/tagout when multiple employees are servicing equipment, ensuring each authorized employee applies their own lock?
- i. Does the procedure specify that Tagout-only may be used only when the energy-isolating device cannot be locked out, or when equivalent protection to lockout can be demonstrated, as required by 29 CFR 1910.147(c)(3)?
- j. Does the procedure ensure that each lock is under the exclusive control of the employee who applied it and that any emergency removal of a lock follows OSHA's requirements in 1910.147(e)(3)?
- k. How are outside contractors made aware of facility Lockout/Tagout procedures?
- l. When a facility allows an outside contractor to use its own Lockout/Tagout procedures, who is verifying the outside contractor's procedure meets OSHA requirements?
- m. Does the procedure include steps for removing a lock when the authorized employee is not available, including verification of absence and notification before resuming work, as required by 1910.147(e)(3)?

Product Stewardship

The requirement for product stewardship is that a facility integrates the concepts of product stewardship throughout a product's lifecycle.

Product Stewardship, an important part of the ChemStewards program, suggests that a facility should manage the full life cycle of its products. It is designed to make health, safety and environmental protection an integral part of the design, manufacture, distribution, use, recycle and disposal of products. As such, Product Stewardship has important relationships with pollution prevention and OSHA regulatory performance. Done properly, Product Stewardship fosters the sharing of information about the proper use, storage and disposal of products with multiple groups such as customers, suppliers, distributors and contractors. Key points are:

Manufacturing - the organization can review how a product will be manufactured. Inherent in the consideration is the impact the manufacturing process will have on employees, the community and the environment.

Transportation – the organization should consider the transportation of the product and the raw materials used in manufacturing the product. Transportation includes: carrier selection, review of supplier and customer selected carriers, consideration of transportation routes, modes, and scheduling of shipments.

Use - the organization should review how the product will be used. The review should also include the possible misuses of the product. Customer feedback is very helpful in understanding how the products are actually used.

Disposal - the organization should encourage the safe disposal of its products by the customer (where recycling or re-use is not possible).

The following references are intended to assist members to implement a Product Stewardship program:

1. Regional and State Product Stewardship programs
2. <https://productstewardship.us/epr-laws-map/>Chemical Industries Association's Product Stewardship Guidance Online -
3. <https://www.cia.org.uk/chemicals-management/product-stewardship-guidance/121.article>ACC provides manuals online for specific chemicals.

Example:

[American Chemistry Council – Product Stewardship Resources](#) Perform a web search under "[chemical product stewardship](#)" for an extensive listing of specific chemical company programs.

Glossary of Terms & Acronyms

Each industry creates and uses its own “language” to communicate commonly used terms and concepts. The following is a list of commonly used management system terms used in the module. Acronyms are shown in parenthesis next to the term followed by the definition.

ChemStewards Management System (CSMS): A continuous improvement cycle that builds upon planning, implementing, reviewing and improving the actions that an organization takes to meet its EHS&S obligations.

Operational Control: Procedures or limits that define operational parameters of a facility [e.g., permit limits, regulatory constraints, design parameters of equipment, calibration specifications, specific work instructions, etc]. The identification, planning and management of operations or activities in line with the CSMS policy, objectives and targets.

Other Requirements: Requirements that an organization has committed to following, other than legal requirements.

Pollution Prevention [P2]: Prevention of pollution through source reduction and waste minimization techniques and technologies.

Records: Proof of actions taken outlined in the Management System.

Risk: Combination of the likelihood and consequences of a specified hazardous event occurring.

Risk Assessment: Overall process of estimating the magnitude of risk and deciding whether or not the risk is tolerable.

SOCMA Member's Best Practices

ChemDesign Products

Hazards and Risk Assessment – This company has established an excellent system for hazards and risk assessment. Typically, a process of change notification [PCN] triggers a process hazard analysis [PHA] to be carried out based on technical judgment. At the startup of any process, a PHA (Process Hazard Analysis) is performed at the site and is based on product. The PHA Team consists of representatives from Production, Safety & Environmental, Engineering and Lab & Quality Control departments. During the PHA, each step of the process is evaluated from a safety, quality, environmental, and production standpoint. Any action item developed by the PHA team is documented and tracked for completion. All corrections or revisions developed during the PHA must be completed prior to the start of the process. The PHAs occur frequently and are significant in the risk evaluation process.

If any aspect of the process changes, the manager of the particular process issues a PCN (Process Change Notification) which must be agreed to and signed by representatives of the PHA review team. Based on the extent of the change, the PCN may trigger an additional PHA. A second PHA would be triggered for any significant process change such as transferring the process from one production area to another, major equipment changes, changes within the actual production procedure or even if a process has not been utilized for a time period greater than twelve months. . The PHA team review involves all concerned departments as well as frontline production operators. These reviews help increase communication for team members and in turn serve as a significant source for quality improvement as well as production cost reduction for the organization.

Pressure Chemical Company

EHS&S Applicable Legal and Other Requirements – Every product that is processed at the facility undergoes a detailed EHS&S applicable legal and other requirements review in addition to a hazards and risk analysis. This is an excellent approach for managing regulatory and operational risk posed by manufacturing operations.

The EHSS review performed at the site is actually a series of checklists that aid in conducting these analyses which cover the following areas: TSCA review, PSM review, RMP review, DHS review, RCRA, CERCLA, SARA, HON rule, OSHA hazards review, Waste review and characterization, Materials of construction, Shipping and storage review, PPE review, Customer's EHS&S requirements review, Training requirements, Emissions estimates and methods of scrubbing and PHA results evaluation.

Checklists are utilized because the facility takes on projects, usually, in an iterative manner. First, they do a "triage" to identify red flags that sometimes can derail a project right off the bat (for instance, if a project requires that they store an RMP level of phosgene, they do not move forward).

If a project gets past that initial check, they do a little more digging to try and understand the scope and deliverables for any given project (so, at this point, they might see that more waste would be generated than they have the capacity to store, which might result in declining a project). If they don't uncover any serious issues during that review, they take a much closer look at every aspect of the project and start to do things like waste characterization, emissions estimates, etc, providing our customer with a detailed proposal on our approach. If they go to all the trouble of writing a proposal, they are pretty certain that they can do the work safely and effectively, and be of value to the customer.

Ethox Chemicals

Facility Job Descriptions and Work Assignments – *Has established a system for implementing and maintaining elements of the CSMS as part of the facility job descriptions and work assignments. This practice ensures that each CSMS responsibility is accounted for at this site.*

CHEM Group

Non-conformance and corrective Action Procedure – *This company has established an excellent procedure that ensures both actual and potential non-conformances in the CSMS are addressed, corrected and/or prevented. In addition, monthly status reports are issued to employees as part of their communication tools.*

Cambrex

Training Calendar – *This company has established a SSAP training calendar with drop down menus for the trainers.*

Penn Specialty Chemicals

Document Management System – *This company has established a good document management system using the company's intranet. The system is called PENNnet.*

Gabriel Performance Products

Hazards and Risks Assessment – *This facility has an excellent PSM/RMP process in place that addresses hazards and risks at the site and also meets the EHS&S regulatory requirements.*

Iofina

Internal Stakeholder Communication – *This facility has instituted quarterly EHS&S meetings with its employees for internal stakeholder communication as well as to convey site-wide responsibilities. The meetings cover an extensive review of the site's EHS&S activities and action plans.*

Boulder Scientific Company

Communications Procedure – This facility has a communications procedure that encompasses both internal and external communication. The procedure details what should be communicated and how the information is dispersed.

ESCO Company

Internal Management System Audit Procedures – This facility has procedures which are an extension of the quality audit procedures. The procedures are extensive and demonstrate an acute understanding of a good EHS&S management system. The facility uses the ISO 14001 and OHSAS 18001 management systems to meet the ChemStewards requirements. The internal audit work papers and checklists are combined for all three management systems that we use (ISO 9001, ISO 14001, and OHSAS 18001). For example the audit work papers and checklists for management review include the information to check for all three management systems. The internal auditor audits management review for all three management systems at the same time and with the same audit work papers and checklist.

Management of Change Tool – This facility also internally developed a MOC tool using Microsoft Access. The tool is tailored to batch processes. This system has the best MOC tool and associated procedures for communication to its operators of any temporary or permanent changes. The Access database allows the company to document the change and to keep a searchable electronic record of the change. The Access system also sends an e-mail to employees regarding the change. If the change involves a change to the batch sheet, the first page of the batch sheet summarizes the change and the changed part of the procedure is highlighted. A paper copy of the MOC is kept in the control room and all affected operators must sign the MOC.

Lonza

Hazards and Risk Communication – This company has established a well-developed process for identifying, managing and communicating hazards and risks using their own software program [RAMS]. RAMS is utilized for the identification of hazards, risk assessment and then mitigation depending on the probability and severity. They have an internal matrix that is used for risk acceptance.