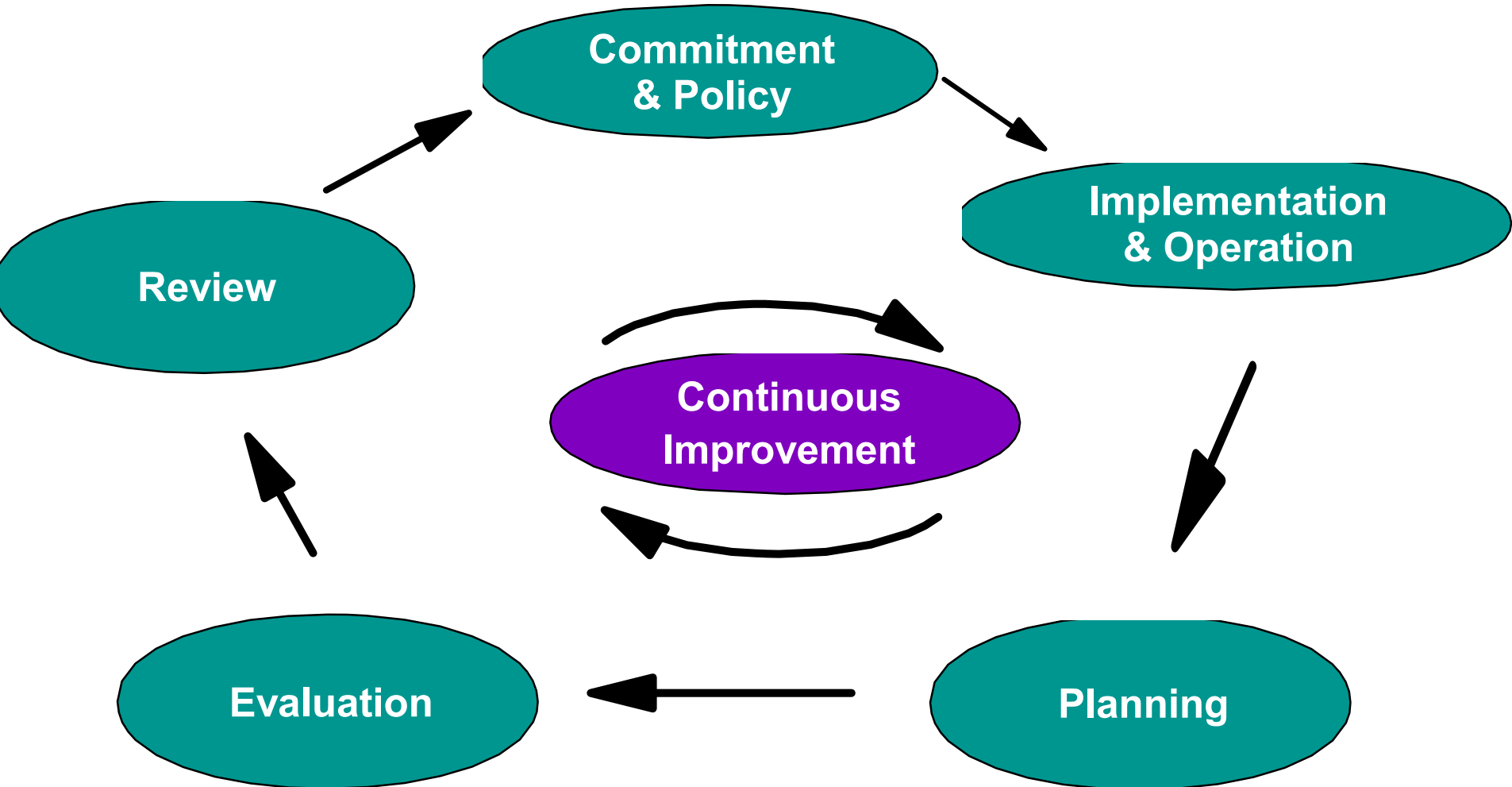# ENVIRONMENTAL MANAGEMENT SYSTEMS

DEFINITION

An Environmental Management System (EMS) is a set of management processes, and procedures that allows an organization to integrate environmental considerations into day-to-day decisions and practices, thereby improving both its environmental and economic performance. It provides a framework for managing environmental responsibilities in a more systematic way.

EMS GUIDANCES

- EMSs: An Implementation Guide for Small and Medium-Sized Organizations http://www.epa.gov/owm/iso14001/ems2001final.pdf

- EMS Primer For Federal Facilities – http://esdev.sdc-moses.com/oeca/ems/details.cfm#fedfac

- EMS Guide for Small Laboratories - http://www.epa.gov/sbo/labguide.htm

- DfE's Integrated EMS Implementation Guide - http://www.epa.gov/dfe/tools/iemsguide.htm

EMS GUIDANCES (con't)

- Compliance-Focused EMS – http://esdev.sdc-moses.com/oeca/ems/details.cfm#ems

- Commission for Environmental Cooperation: Improving Environmental Performance and Compliance: 10 elements of Effective EMSs http://esdev.sdc-moses.com/oeca/ems/details.cfm#ems

- Implementation Guide for The Code of Environmental Management Principles for Federal Agencies (CEMP) http://esdev.sdc-moses.com/oeca/ems/details.cfm#ems

ENVIRONMENTAL POLICY

- An organization must have a written environmental policy that clearly communicates top management's commitment towards a cleaner environment.

- This policy serves as a foundation for the organization's EMS and provides a unifying vision of environmental concern by the entire organization.

ENVIRONMENTAL POLICY (Commitments)

- Compliance with applicable federal, state, and local environmental requirements;

- Continuous improvement in environmental performance, including areas not subject to regulation;

- Provide adequate resources to make the EMS work, including skilled personnel, technology and financial resources;

- Pollution Prevention (e.g., source reduction); and

- Public Outreach/Community Involvement

STRUCTURE, RESPONSIBILITY, AND ACCOUNTABILITY

- Develop organizational charts that identify units, management, and other individuals having environmental performance and regulatory compliance responsibilities.

- Identify and define duties, roles, responsibilities, and authorities of key environmental program personnel in implementing and sustaining the EMS.

STRUCTURE, RESPONSIBILITY, AND ACCOUNTABILITY (con't)

- Specify the accountability and responsibilities of management, on-site service providers, and contractors for environmental protection practices, assuring compliance, required reporting to regulatory agencies, and corrective actions implemented in their area(s) of responsibility.

- Create incentive programs to reward and recognize employees for excellent environmental performance.

STRUCTURE, RESPONSIBILITY, AND ACCOUNTABILITY (con't)

- Outline the potential consequences for departure from specified operating procedures, including liability for civil/administrative penalties imposed as a result of noncompliance.

- Designate a management representative who will ensure that the EMS is developed, implemented, and maintained.

- Environmental responsibilities cannot be confined to an environmental office; they must be recognized as a primary responsibility of all employees.

COMMUNICATIONS

- Establish a system for communicating environmental issues/information internally to all employees, on-site service providers, and contractors, and externally to regulatory agencies, customers, neighbors, etc. and a system for receiving and addressing their concerns.

- Effective internal communications require mechanisms for information to flow top-down AND bottom-up. Method chosen to receive information/ suggestions from employees must protect them from negative repercussions.

COMMUNICATIONS (con't)

- The external communication strategy must include protocols for:
  - ➤ responding to inquiries and requests from interested parties for release of EMS and environmental performance information; and
  - ➤ interacting with regulatory agencies regarding environmental issues and regulatory compliance, including required reporting.

- A more proactive external communications strategy may result in competitive advantage and improved community relations.

ENVIRONMENTAL REQUIREMENTS & VOLUNTARY UNDERTAKINGS

- EMS should provide a means to identify, interpret, and effectively communicate environmental requirements and voluntary undertakings (e.g., industry codes, EPA's Partner's for the Environment, CEMP, SGP) to affected employees, on-site service providers, and contractors.

- It should include procedures for ensuring that the organization meets these environmental requirements and voluntary undertakings.

ENVIRONMENTAL REQUIREMENTS & VOLUNTARY UNDERTAKINGS

- EMS should also specify procedures for anticipating changes to environmental requirements --- including new requirements that may apply as a result of changes in operations --- and incorporating those changes into the EMS.

- Resources Available:
  - U.S. EPA Region 2's Healthcare Website: http://www.epa.gov/region02/healthcare/

  - EPA Region 2's Compliance Assistance Program: NY/NJ: (212) 637-3919 or buxbaum.diane@epa.gov

ENVIRONMENTAL IMPACTS

- EMS should contain an ongoing process for assessing an organization's products, activities, and services as well as those of its contractors, and on-site service providers for the purposes of determining how these products, activities, and services interact with and impact the environment as well as determine the significance of these impacts.

- This process should identify activities where there is a potential for accidents and emergencies.

ENVIRONMENTAL IMPACTS

- The process should also identify operations and wastestreams where equipment malfunctions and deterioration, operator errors, and discharges or emissions may be causing, or may lead to:

  - ➢ releases of hazardous waste or other pollutants to the environment;
  - ➢ a threat to human health or the environment; and
  - ➢ violations of environmental requirements.

ENVIRONMENTAL IMPACTS (con't)

- The process should provide a mechanism to:

  ➢ keep impact information up-to-date; and

  ➢ use the information in setting objectives and targets, establishing operational controls, defining monitoring needs and in planning and designing new processes and products.

ENVIRONMENTAL IMPACTS (Implementation Tips)

- Develop flow diagrams of your major processes.

- Use a cross-functional team to identify impacts.

- Trade/professional associations are a good source of information on where an industry in general has had past compliance and other environmental problems.

- EPA Region 2 Fact Sheet: Common Violations and Problems Found at Hospitals

ENVIRONMENTAL IMPACTS (Implementation Tips)

- Getting Started:
  - Look at the wastes you ship off site (whether or not they are reclaimed or treated). This includes solid and hazardous waste, and any sludge or liquids you ship out.
  - Note any discharges of water or wastewater to sewers, drain systems, underground injection wells, ponds, lakes, streams and groundwater. Run-off from parking lots and grounds (salt, fertilizer, oils, etc.) should also be factored in.
  - Check for leaks or spills as evidence of poorly designed and maintained equipment.

ENVIRONMENTAL IMPACTS (Implementation Tips)

- Getting Started (con't):
  - ➢ Make a list of your organization's activities, products, and services that are subject to environmental requirements.
  - ➢ Identify potential emergencies/accidents by looking over current emergency response plans and asking a series of 'what if" questions related to hazardous materials, activities and processes.
  - ➢ Consider prior accidents, spills, leaks, incidents and enforcement actions.
  - ➢ Check to see if any of your operations are located in ecologically sensitive areas (e.g., wetlands).

ENVIRONMENTAL IMPACTS (Implementation Tips)

- Getting Started (con't):
  - ➢ Factor in land, energy, water, and other natural resource use into your assessment. What activities, create the most waste or use the most energy?
  - ➢ Review your material safety data sheets for toxic or hazardous materials. Are there more environmentally friendly alternatives?
  - ➢ Maintenance activities should be included in your assessment, including non-routine maintenance such as tank clean ups.
  - ➢ Factor in concerns raised by the community such as noise, odor, dust, traffic, appearance, etc.

OPERATIONAL CONTROL

- EMS should include a process for identifying activities where documented standard operating procedures (SOPs) are needed to:
  - ➢ prevent potential violations or pollutant releases;
  - ➢ respond to accidents and emergencies; and
  - ➢ meet your organization's goals.

- It should also define a uniform process for developing, approving and implementing these SOPs.

OPERATIONAL CONTROL (Implementation Tips)

- It is important that the people who will implement the SOPs be involved in drafting them to ensure that they are accurate and realistic.

- Don't reinvent the wheel. Build on informal procedures and existing SOPs, where possible.

- Strive to keep SOPs simple and concise.

- The need to plan and control maintenance on equipment that could cause significant impacts should not be overlooked

CORRECTIVE/PREVENTIVE ACTION & EMERGENCY RESPONSE

- An organization, through its EMS, should establish procedures for preventing, detecting, investigating, promptly initiating corrective action, and reporting any occurrence that may cause the organization to deviate from its environmental policy.

- Particular attention should be paid to incidents that may have an effect on compliance with environmental requirements as well as on environmental performance in regulated and non-regulated areas.

CORRECTIVE/PREVENTIVE ACTION & EMERGENCY RESPONSE (con't)

- These procedures should include:
  - ➢ routine, objective, self-inspections by department supervisors and trained staff, especially at high risk/hazard locations identified during the assessment;
  - ➢ internal and external reporting of potential violations and release incidents; and
  - ➢ investigation and prompt and appropriate correction of potential violations (The investigation process includes root-cause analysis of identified problems to aid in developing the corrective action).

CORRECTIVE/PREVENTIVE ACTION & EMERGENCY RESPONSE (con't)

- The procedures should also include:
  - ➢ a process for mitigating any adverse impacts on the environment that may be associated with accidents or emergency situations and for ensuring that similar incidents are avoided;
  - ➢ a system for development, tracking, and effectiveness verification of corrective and preventative actions; and
  - ➢ periodic testing of emergency plans/procedures, wherever practicable.

MONITORING AND MEASUREMENT

- A monitoring and measurement program is necessary to understand how well an organization's EMS is working and to help identify steps to improve the system. This program should include:
  - ➢ monitoring key characteristics of activities that can have significant environmental impacts;
  - ➢ tracking environmental and system performance; and
  - ➢ evaluating compliance with environmental requirements.

- Compliance evaluation should include periodic compliance audits by an independent auditor(s).

VOLUNTARY AUDIT POLICY

- The purpose of the Audit Policy is to enhance protection of human health and the environment by encouraging regulated entities to voluntarily discover, disclose, correct and prevent violations of federal environmental requirements.

- EPA Region 2's Auditing Website
  http://www.epa.gov/region02/capp/cip

- John Gorman
  EPA Region 2's Audit Policy Coordinator
  212-637-4008 or gorman.john@epa.gov

CORPORATE-WIDE AUDIT AGREEMENTS

- Corporate audit agreements allow EPA and the company to reach mutually acceptable terms regarding schedules for conducting the audit, and disclosing and correcting any violations discovered.

- If facilities all in Region 2, call John Gorman at (212) 637-4008.

- In the case of multi-Regional facilities, call Leslie Jones at (202) 564-5123.

TRAINING, AWARENESS & COMPETENCE

- The EMS should establish procedures to ensure that all personnel (including employees, on-site service providers, and contractors) whose job responsibilities affect the ability of the organization to achieve its EMS goals have been trained and are capable of carrying out these responsibilities.

- Particular attention should be paid to personnel responsible for meeting/maintaining compliance with environmental requirements and/or whose tasks can cause significant environmental impacts.

TRAINING, AWARENESS & COMPETENCE (con't)

- All personnel should be aware of the organization's environmental policy, significant environmental impacts of their work, their roles and responsibilities within the EMS, procedures and environmental requirements that apply to their activities and what could happen if they don't follow procedures.

- Document training provided.

- Train employees on a continuous basis.

ORGANIZATIONAL DECISION-MAKING & PLANNING

- An EMS should include a process for performing environmental planning. This process should:

  - ➢ require the development of written targets, objectives, and action plans;

  - ➢ specify how the action plans will be tracked and progress reported; and

  - ➢ evaluate an array of alternatives (pollution prevention, recycling, control equipment, etc.) when developing action plans.

ORGANIZATIONAL DECISION-MAKING & PLANNING

- The EMS should describe how environmental concerns/issues will be integrated into organizational decision-making, including plans and decisions on capital improvements, product and process design, training programs, and maintenance activities.

RECORDS MANAGEMENT & DOCUMENT CONTROL

- EMS should establish procedures to ensure maintenance of records developed in support of the EMS.

- Basic records management is straightforward, you need to decide:
  - what records you will keep;
  - who maintains them and where;
  - how long they are kept;
  - how they are accessed; and
  - how they are disposed.

RECORDS MANAGEMENT & DOCUMENT CONTROL (con't)

- Organization should have document control procedures in place so that everyone is working with correct, and up-to-date SOPs, drawings, and other documents.

- These procedures should ensure that:
  - ➢ EMS documents can be located;
  - ➢ they are periodically reviewed, updated and approved for adequacy by authorized personnel;
  - ➢ obsolete documents are removed; and
  - ➢ current versions are available where needed.

RECORDS MANAGEMENT & DOCUMENT CONTROL (Implementation Tips)

- Maintaining your documents and records electronically allows easy updating and access control, and ensures that the most up-to-date version of a document is used by all readers.

- Don't reinvent the wheel! Your organization probably has document controls and record management processes in place for other business purposes (such as finance, human resources, or purchasing). Assess how well these controls work and if they can be adapted for your EMS.

CONTINUING PROGRAM EVALUATION AND IMPROVEMENT

- The organization should require periodic (at least annually) objective evaluations of the EMS.

- These evaluations should be documented and the results used by management to bring about improvements in the EMS.

Resources

- EPA Region 2's EMS website: http://www.epa.gov/region02/ems

- Healthcare Guide to P2 Implementation through EMSs by the Kentucky Pollution Prevention Center

- EMRs at Federal Facilities
  Contact: Kathleen Malone
  (212) 637-4083 or malone.kathleen@epa.gov

- Environmental Management in Healthcare Facilities, Edited by Kathryn D. Wagner, PhD
  http://www.harcourthealth.com/wbs/index.html