ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) IMPLEMENTATION/ CERTIFICATION WORKSHOP

Iowa Department of Natural Resources
Des Moines, Iowa
October 22-23, 2013

Presented by: Tara McCullen, CHMM
Wenck Associates, Inc.

Welcome!

- Instructor Introductions

- Course content and materials

- Logistics

- Introductions:
  - ➢ What is your name?
  - ➢ Where do you work?
  - ➢ What is your title/ job responsibilities?
  - ➢ What experience do you have in environmental compliance?
  - ➢ What experience do you have with EMS?
  - ➢ What is your current level of knowledge of ISO 14000?
  - ➢ What do you hope to gain from this course?

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ISO Background

- General Overview of ISO

- ISO: Why and How

- Review of ISO 14000 Standards

- Benefits of an EMS

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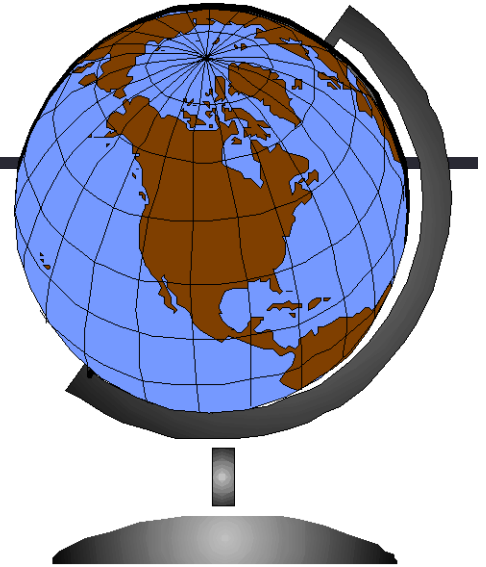
What is the ISO?

- International Organization for Standardization
- Founded 1946
- Representatives from 140+ countries
- American National Standards Institute (ANSI) – U.S. representative

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Why ISO 14000 Was Developed

- Success of ISO 9000 quality management standards
- Proliferation of environmental management standards
- Increasing interest and need for environmental management
- Need for consistency between EMS in developed and developing countries

How ISO 14000 Was Developed

Strategic Action Group on the Environment (SAGE)

- Special Committee formed in 1991
- Responsible for determining whether an environmental standard could:
  - ➤ Achieve a common approach to environmental management
  - ➤ Enhance a company's ability to attain and measure environmental performance
  - ➤ Facilitate trade / Remove barriers

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How ISO 14000 Was Developed

SAGE Recommendation:

- ISO Technical Committee (TC) 207
  - Formed in 1993 to develop ISO 14000 series of standards
  - Encompassed 200 delegates from 30 countries

ISO 14001 Revision Status

- Initial version of the standard released in 1996 (ISO 14001:1996)
- Current version is 2004 (ISO 14001:2004)
- The next version of the standard is currently being drafted. Final release is expected in 2015.

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ISO 14001: Environmental Management System (EMS)

- An overall management system that includes:
  - ➢ Organizational structure
  - ➢ Planning activities
  - ➢ Responsibilities
  - ➢ Practices
  - ➢ Procedures
  - ➢ Processes and resources
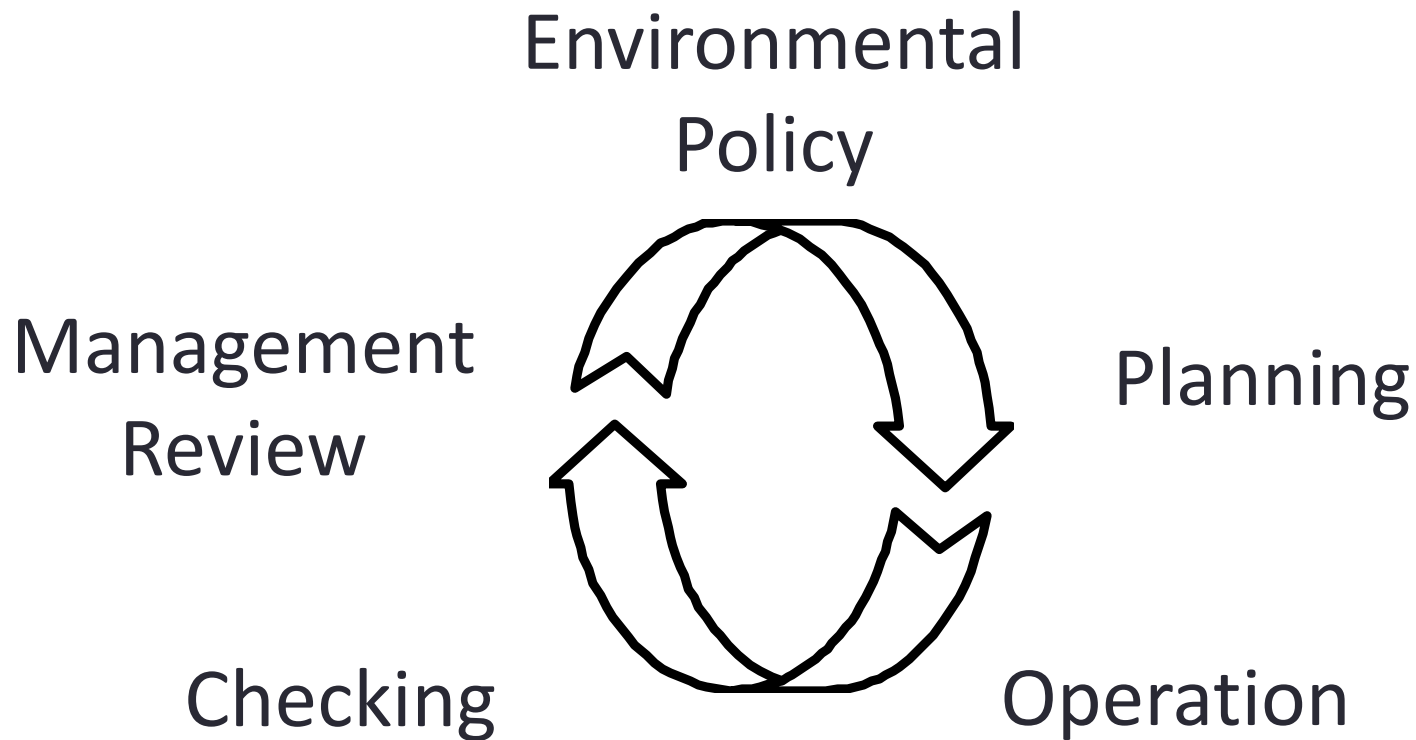

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EMS Principal Elements:

- Environmental Policy

- Planning

- Implementation and operation

- Checking

- Management review

EMS Model

Environmental Policy

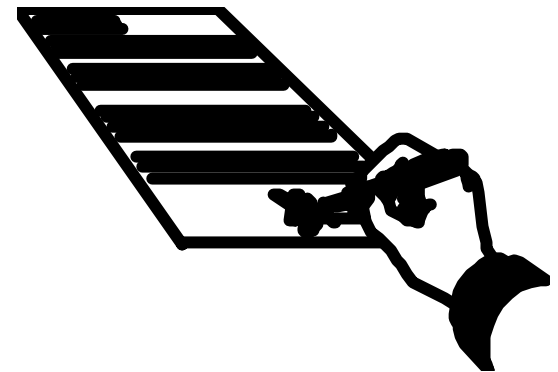Management Review

Planning

Checking

Operation

EMS Commitment & Policy

- Environmental policy establishes overall environmental goal

- <u>Top management commitment:</u>
  - ➢ make it known
  - ➢ make it on-going

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EMS Planning

- Develop a plan to fulfill Environmental Policy
- Identify environmental aspects
- Identify regulatory and other requirements
  - ➢ Federal, state and local, corporate, voluntary
- Develop objectives and targets
- Develop environmental programs

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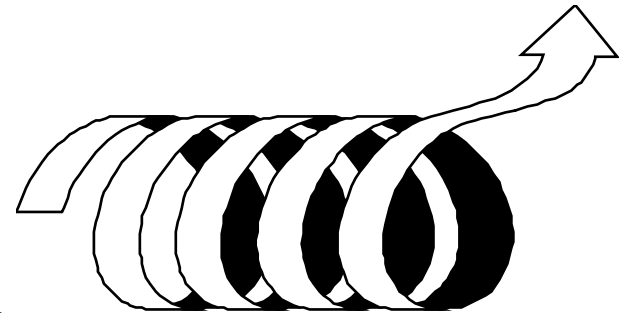
EMS Implementation

- Structure and responsibility
- Training, awareness, and competence
- Communication
- Documentation and control
- Operational control
- Emergency preparedness and response

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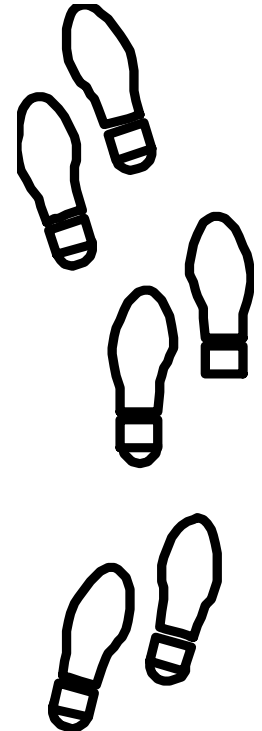
EMS Checking

- Monitoring and measurement
- Nonconformity, corrective and preventive action
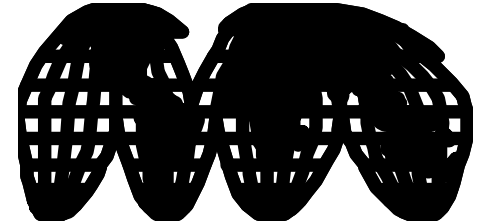- Records
- Audits

Management Review

ISO 9001 vs. ISO 14001

Similarities

Both are management systems

- Define Processes and establish Control
- Need management support and an organizational structure to support the system

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ISO 9001 vs. ISO 14001

Similarities

- Documented procedures
- Control of Documents
- Control of Records
- Management Commitment
- Policy
- Responsibility/Authority
- Monitoring & Measuring
- Calibration
- Training
- Communication

- Emergency Preparedness and Response
- Management Review
- Internal Audits
- Control of Nonconformity
- Corrective and Preventive Action
- Continual Improvement

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EMS Results and Benefits

BEFORE

|	
Reactionary	→ Proactive, Continuous Improvement
Compliance Focus	→ Beyond Compliance
Separation of EHS and Other Processes	→ Integration of EHS and Other Processes
Informal or Undocumented Procedures/Inconsistency	→ Explicit, Documented Procedures/Consistency
Environmental Responsibilities Isolated	→ Improved Communication/ Responsibility Plant-wide

AFTER

Key Benefits: Increased efficiency, reduced risk/cost, improved performance

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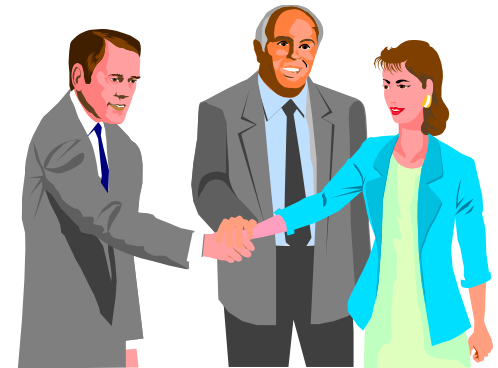Business Professionals

Benefits of an EMS

- Improved environmental performance
- Improved environmental compliance
- Reduced waste = increased profits
- Reduced liability
- Improved public image
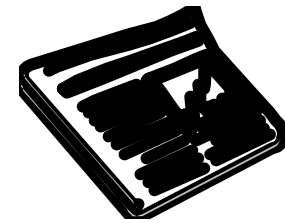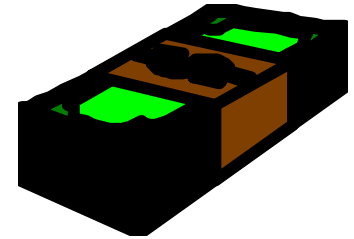
Drivers for ISO 14001

- Customers
- Community
- Environmental activists
- Insurance and banking industries

Benefits of ISO 14001 Registration

- Tightens up existing system
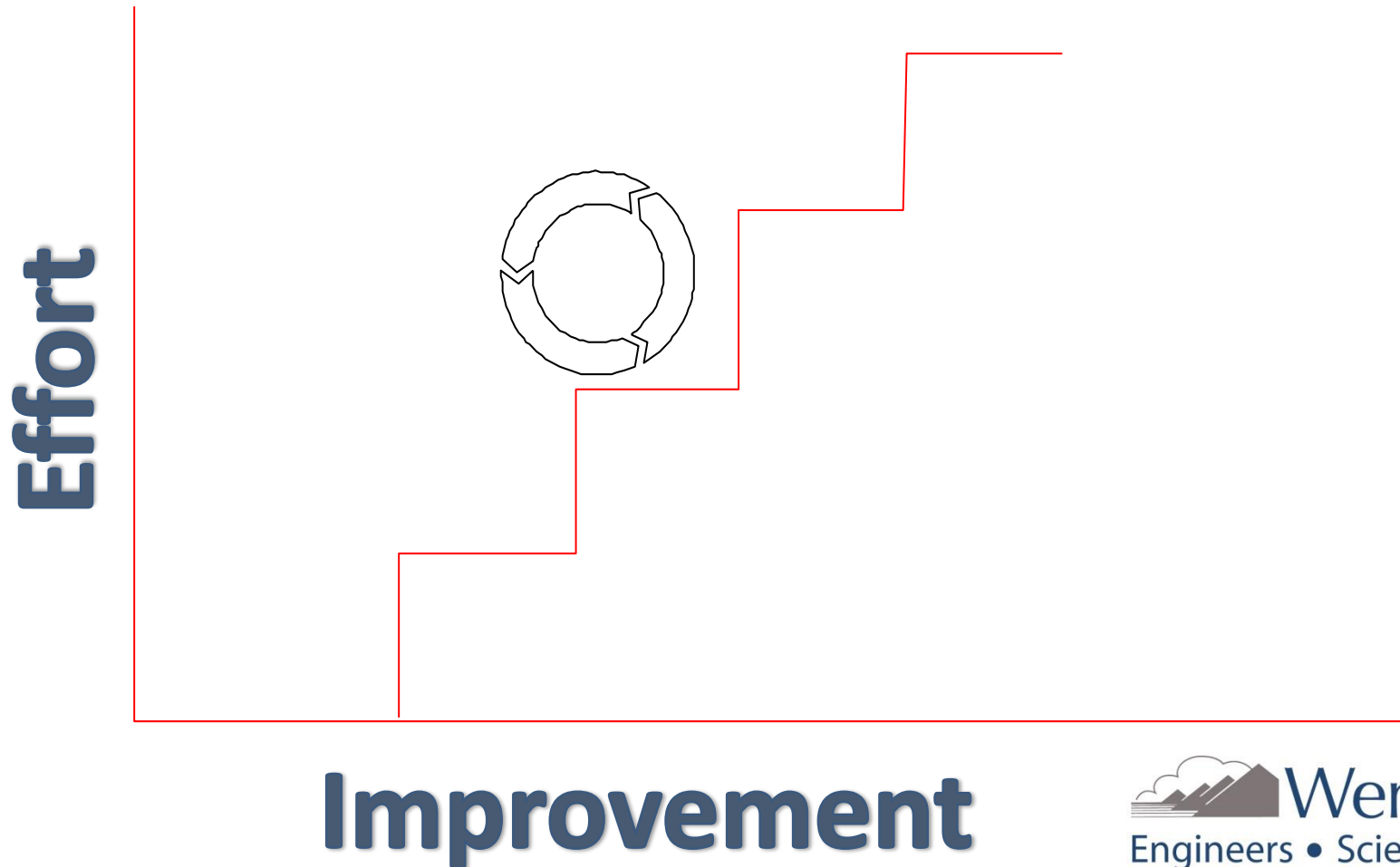
- Continuous improvement

- International recognition

- Enhanced marketing capabilities

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Benefits of ISO 14001 Registration

Benefits of ISO 14001 Registration
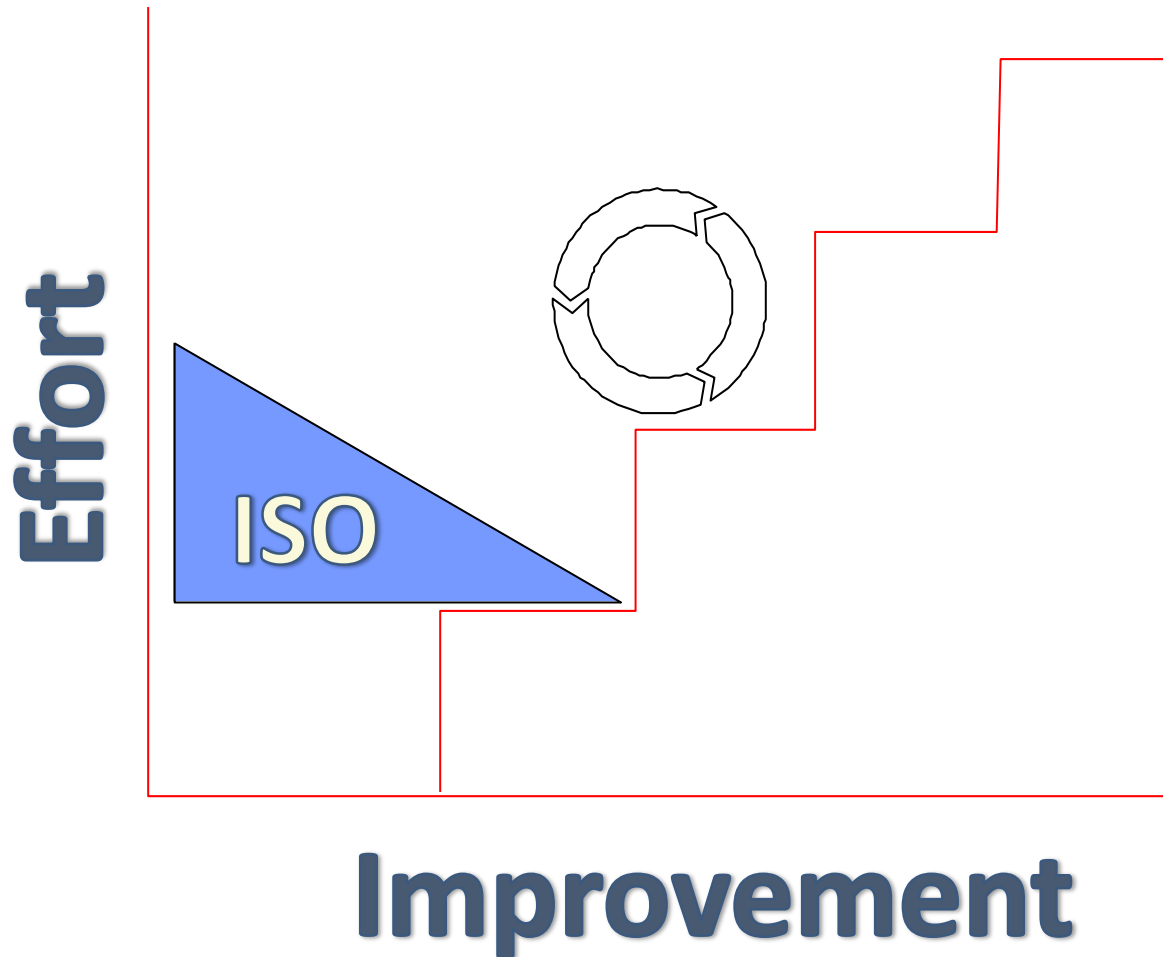
SUCCESS STORIES

Success Story #1

- Electro-Motive Diesel (EMD) is the world's largest builder of diesel-electric locomotives for all commercial railroad applications: intercity passenger, commuter, freight, switching, industrial and mining.
- Company headquarters, engineering facilities and parts-manufacturing operations are located in LaGrange, Illinois, just west of Chicago.

Program Challenges

- Ownership Changes
- Management Representative turnover
- Employee turnover
- Process/operational changes

Keys to a Successful EMS

- Provides a framework for handling challenges and managing change.
- Top-down commitment.
- This is our compliance program.
- Shifted environmental responsibilities from Environment & Energy Group to other parts of the facility (operations, maintenance, etc.).

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Keys to a Successful EMS

- Incorporation of EMS into day-to-day business operations.
- Employee and Union Involvement.
- Cross-Functional Team.
- Objectives & Targets which drive continual improvement and cost savings.

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Success Stories

- Compliance is a "no-brainer"
- Multi-year Illinois Governor's Pollution Prevention Award Winner
- Objectives & Targets = Environmental impact reductions and cost savings
- Improved relationship with regulators & community

Success Story #2

- Large manufacturing facility with significant environmental compliance requirements

- At start of EMS implementation, facility had been operating without a consistent EHS Manager for two years.

- Corporate headquarters in Europe required ISO 14001 certification.
  - Facility delayed implementation start because lack of EHS Manager to lead and manage.

- ISO 14001 certification included in personal performance goals of executives.

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The Outcome of EMS Implementation

- Ownership!
  - Went from "no one owns to environmental" to "everyone owns environmental."
  - Environmental compliance and environmental management have been integrated into the facility's day-to-day business operations.
  - Employees throughout the facility have an appreciation and understanding of environmental requirements and why they are important.

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The Outcome (continued)

- A well-managed, environmentally-compliant facility which is *sustainable* because it is driven by a **system**, rather than an individual.

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Success Stories

- Shortly after certification, the facility received a surprise visit from the state environmental regulatory agency. They passed the multi-media audit with flying colors!

- In 2012, the facility won an Emerald Award, a global corporate award recognizing excellence in environmental management.

- In 2013, this project was awarded an Engineering Excellence Honor Award from the Georgia Engineering Alliance.

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Don't just take my word for it…

"ISO 14001 has been our life savior. Our company had been through a number of EHS managers, and we were very concerned about our environmental status. The work we did to meet the ISO 14001 standard helped us identify several shortfalls in our systems, which if left unaddressed, could have led to serious issues. ISO14001 has moved us to a highly documented system of environmental controls that we need to manage. This standard also provided us the framework to engage our crews in environmental issues, point out the safety aspects of correct environmental compliance, as well as the benefits to the environment."

 - Brad Anderson, ISO 14001 Management Representative

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Introduction to ISO 14001:2004(E)

Environmental Management Systems - Specification with guidance for use

An International Standard for an Environmental Management System

Overview

A Process - Not a Performance Standard!

- Clause 1 - *Scope*
- Clause 2 - *Normative References*
- Clause 3 - *Definitions*
- Clause 4 - *Environmental Management System (EMS) Requirements*

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Clause 1 - Scope

Applicable to any organization that wishes to:

- **Implement**, maintain, and improve an environmental management system

- **Assure** itself of its conformance with its stated environmental policy

- **Demonstrate** such conformance to others

- **Seek** certification/registration of its environmental management system by an external organization

- **Make** a self-determination and self-declaration of conformance with this International Standard

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Clause 2 - Normative References

- There are no normative references at present

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Clause 3 - Definitions

Key definitions:

- Auditor
- Continual improvement
- Environment
- Environmental aspect
- Environmental impact
- Interested party
- Internal audit
- Prevention of pollution

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4.1 General Requirements

- Establish and maintain an EMS to the requirements of ISO 14001:2004(E)
- Define and document the scope of the EMS

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4.2 Environmental Policy

- Top management is responsible
- Provides rationale for an organization to pursue environmentally conscious policies
- States overall intentions of the organization regarding environmental issues
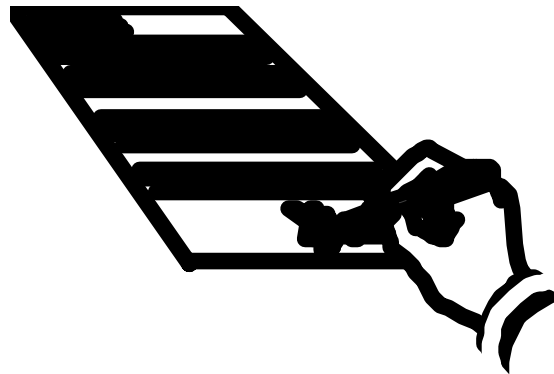
4.2 Environmental Policy

*Top Management is stating its **commitment** to:*

- Continual improvement

- Pollution prevention

- Comply with relevant environmental legislation and regulations

  (These 3 commitments MUST be stated in Policy)

- Provide for setting and reviewing its objectives and targets

4.2 Environmental Policy

Further requirements of top management:

- Must be appropriate to nature, scale, and impacts of the business

- Must be documented, maintained, and communicated to all employees and those working on behalf of the organization

- Must be made available to the public

4.3 Planning

4.3.1 Environmental aspects are identified

4.3.2 Legal and other requirements are determined

4.3.3 Objectives and targets are defined and programs are developed

4.3.1 Environmental Aspects

- Establish and maintain procedure(s) to identify aspects
- Can control and have an influence
- Determine which have significant impacts to the environment
- Keep up-to-date

4.3.2 Legal and Other Requirements

- Establish and maintain procedure to identify and have access to legal and other requirements to which organization subscribes

- Determine how they apply to the environmental aspects (*linkage*)

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4.3.3 Objectives, Targets, and Programs

- Establish and maintain at each relevant function and consistent with the policy
- Consider:
  - ➢ Legal and other requirements
  - ➢ Significant aspects
  - ➢ Technological options
  - ➢ Financial, operational, and business requirements
  - ➢ Views of interested parties

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4.3.3 Objectives, Targets, and Programs

- Establish and maintain programs for achieving its objectives and targets
  - ➤ Designate responsibility
  - ➤ Means and time-frame

4.4 Implementation & Operation

4.4.1 Resources, roles, responsibility, and authority

4.4.2 Competence, training, and awareness

4.4.3 Communication

4.4.4 Documentation

4.4.5 Control of Documents

4.4.6 Operational control

4.4.7 Emergency preparedness and response

4.4.1 Resources, Roles, Responsibility, and Authority

- Roles, responsibility, and authority defined
- Documented and communicated
- Appointed management representative(s)
- Resources for implementation and maintenance of EMS

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4.4.2 Competence, Training, and Awareness

- Identify **training** needs and require that certain employees receive training
- **Awareness** of environmental policy and programs; significant impacts of work including emergency preparedness
- Potential **consequences** for departure from operating procedures
- Personnel performing tasks with significant impacts shall be **competent**

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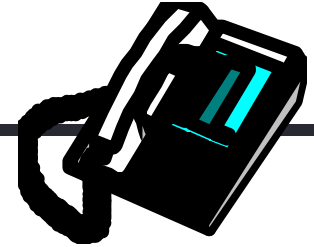
4.4.3 Communication

- <u>Establish and maintain procedures:</u>

  ➤ Internal communication between various levels

  ➤ Receiving, documenting, and responding to external parties

- Decide whether to communicate externally about its significant aspects and record decision

4.4.4 Documentation

Documentation makes the system auditable, and provides a training tool

- Describe the core elements of the EMS
- Provide direction to related documentation
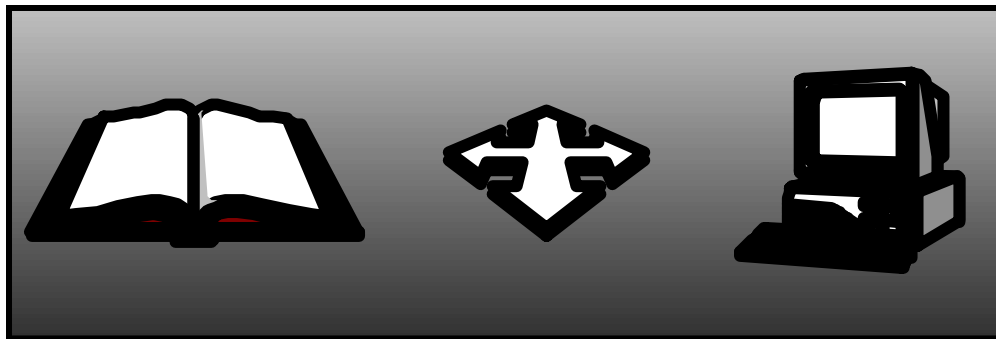
4.4.5 Control of Documents

- Documents related to the EMS must be located, reviewed, revised, and approved on a regular basis

- Documents must be approved

- Current revisions are available

- Obsolete documents are removed or retained and stamped

4.4.6 Operational Control

- Identify operations associated with significant aspects and plan
- Establish and maintain documented procedures where their absence could lead to deviations
- Stipulate operating criteria
- Communicate relevant procedures and requirements to suppliers and contractors

4.4.7 Emergency Preparedness and Response
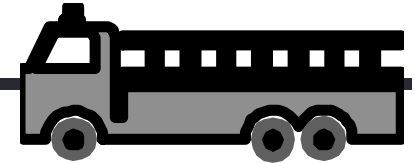
- <u>Establish and maintain procedures:</u>
  - ➤ Identify potential for accidents and emergency situations
  - ➤ Respond to accidents and emergency situations
  - ➤ Prevent and mitigate associated impacts
- Review/revise procedures after occurrence of an emergency situation
- Periodically test procedures

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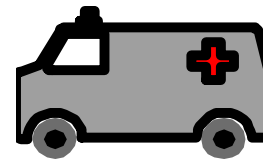
4.5 Checking

4.5.1 Monitoring and measurement

4.5.2 Evaluation of compliance

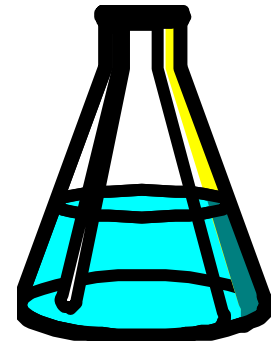4.5.3 Nonconformity, corrective and preventive action

4.5.4 Control of Records

4.5.5 Internal audit

4.5.1 Monitoring and Measurement

- Documented procedure(s) to periodically monitor:
  - ➤Performance
  - ➤Operational Controls
  - ➤Objectives & Targets

- Equipment used for monitoring and measurement must be calibrated and maintained

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4.5.2 Evaluation of Compliance

- Establish and maintain procedures for periodically evaluating
  - ➢ Compliance with legal requirements
  - ➢ Compliance with other requirements

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4.5.3 Nonconformity, Corrective and Preventive Action

- Establish and maintain procedures for defining responsibility and authority for handling and investigating nonconformities

- Implement corrective and preventive actions to eliminate causes

- Follow-up to ensure effectiveness and commensurate with impact encountered

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4.5.4 Control of Records

Records must be identified, collected, stored, and maintained to provide objective evidence of conformity to EMS

- Establish and maintain procedure for identification, storage, protection, retrieval, retention, and disposal of records
- Legible, identifiable, traceable

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4.5.5 Internal Audit

Audits evaluate the implementation, maintenance and effectiveness of the EMS.

- Conducted on periodic basis at planned intervals

- Audit criteria, scope, frequency, and methods defined

- Conducted by competent persons who are in a position to audit objectively and impartially

- Results reported to management

4.6 Management Review

- Top management review EMS for effectiveness
- Must be documented
- Address need for revisions to policy, objectives, and other elements of EMS
- Continual improvement

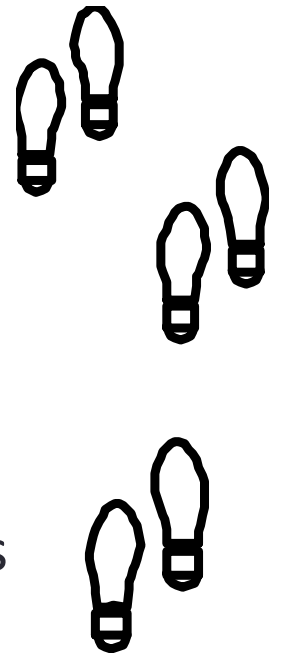# SIMPLE STEPS TO EFFECTIVE EMS IMPLEMENTATION

Implementing EMS in Ten Steps

- Step 1 – Project Plan

- Step 2 – Initial Review

- Step 3 – Identify Legal & Other Requirements

- Step 4 – Determine Significant Environmental Aspects

- Step 5 – Establish Objectives, Targets, and Programs

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Implementing EMS in Ten Steps

- Step 6 – Develop Documentation
- Step 7 – Conduct EMS Training
- Step 8 – Conduct Internal Audit(s)
- Step 9 – Evaluate Management System
- Step 10 – ISO 14001 Registration (optional)

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Step 1 - Project Plan

- Gain commitment from top management.

- Determine the scope.

- Develop schedule and resources to implement project.

- Appoint the management representative.

- Identify implementation team.

- Establish Policy Statement.

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Step 2 - Initial Review

- Also known as a gap analysis.
- Compare existing environmental systems with the requirements of ISO 14001.
  - What do we have that can be incorporated in our EMS?
  - Existing environmental programs
  - Other management systems, documentation, records
- Can be formal or informal process.

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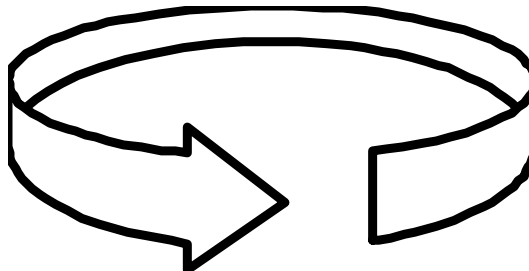
Step 3 - Identify Legal & Other Requirements

- Identify legal and other requirements that affect the organization's products, activities, and services.

Step 4 - Determine Significant Environmental Aspects

- Identify aspects associated with an organization's products, activities, and services.

- Develop criteria of significance and identify significant environmental aspects.

# Step 5 - Establish Objectives, Targets, and Programs

- Set rationale and process for establishing objectives & targets.

- Establish objectives and targets.

- Establish and maintain programs to achieve objectives and targets.

  - ➢ Means, responsibility, time-frame

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Step 6 - Develop Documentation

- Environmental Policy

- EMS Manual

- Procedures

- Operating Criteria/Work Instructions

- Document Control System
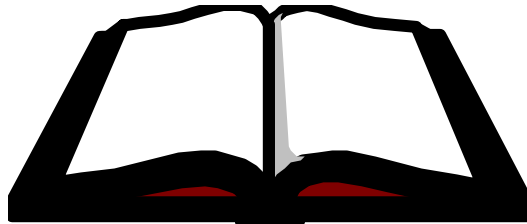
Step 7 - Conduct EMS Training

- Identify training needs
- Conduct training
  - General awareness of the EMS
  - Task specific training
- Ensure employees (and contractors) are competent to perform required tasks.
- General communication of the EMS throughout process is also very important.

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Step 8 - Conduct Internal Audit(s)

- Develop audit team; use qualified internal or external resources.

- Develop audit plan, schedule, tools.

- Select auditors and conduct audits to ensure objectivity and impartiality in the audit process.

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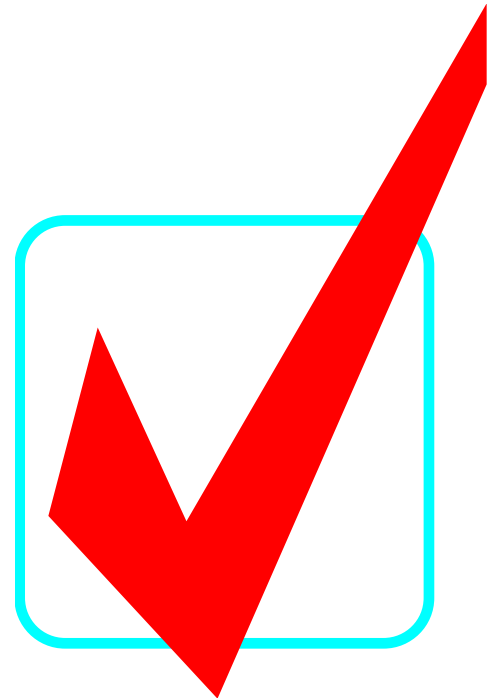
Step 9 - Evaluate Management System

- Evaluate nonconformities and corrective action from internal audits.

- Develop preventative action initiatives.

- Conduct management review of the system.

- Implement the results of this evaluation.

- Continually improve.

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Step 10 - ISO 14001 Registration (optional)

- Conduct registration audit
  - ➢ EMS must go through at least one complete cycle prior to the Stage 2 audit.
- Respond to nonconformances.
- Achieve successful recommendation for registration.
- Maintain and continually improve management system.

EMS PLANNING STEPS

- Environmental Policy
- Environmental Planning
  - Aspects/Impacts
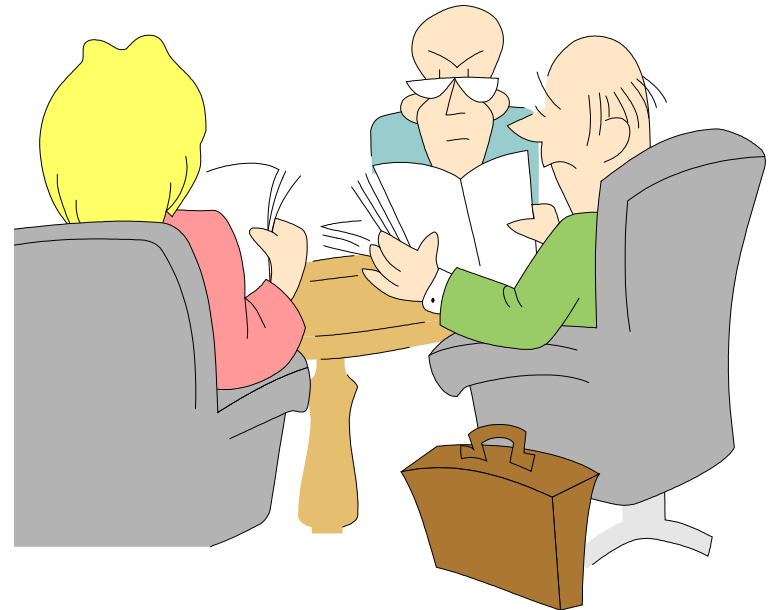 - Legal & Other Requirements
  - Objectives, Targets & Programs

Planning (4.3)

A plan must be formulated to ensure that commitments, stated in the environmental policy, are fulfilled.

ISO 14001 divides planning into three (3) sections:

- Legal & other requirements (4.3.2)
- Environmental aspects (4.3.1)
- Objectives, targets and programs (4.3.3)

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Identify Legal and Other Requirements

- Establish and maintain a procedure to identify Legal and Other Requirements that are applicable to the organization
  - **Federal** (EPA, OSHA, DOT, …)
  - **State** (State environmental laws)
  - **Local** (City, County, …)
  - **Other** (Corporate, Industry, Trade, Customer, etc…)

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Access to Legal and Other Requirements

- Establish and Maintain a Procedure to Have Access to these Legal and Other Requirements
  - ➢ Commercial services/databases
  - ➢ Professional organizations/trade associations
  - ➢ Meetings, Audits, Steering Committees
  - ➢ Communications with regulatory agencies
  - ➢ Training/continuing education for professional competence
  - ➢ Outside resources (attorney, consultant, internet web sites, etc.)

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Applicability of Legal and Other Requirements

- Identify Applicability With Respect to Environmental Aspects of Activities, Products, and Services

  - Who identifies applicability/evaluates potential impacts?
    - ➤Site environmental?
    - ➤Corporate resources?

Identify Applicability with respect to Environmental Aspects

- How is applicability/evaluation of potential impacts performed?
  - Knowledge of applicable laws, regulations, and other requirements
  - Knowledge of facility's activities, products, and services
  - Knowledge of facility's environmental aspects and potential

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Identify Applicability with respect to Environmental Aspects

- When/how often should this review be performed?
  - ➢ Regular reviews (annual?)
  - ➢ Changes to the facility's activities, products, and services
  - ➢ Changes to the facility's environmental aspects and potential impacts
  - ➢ Changes in the laws, regulations, and other requirements
  - ➢ Management of Change

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Legal and Other Requirements Interrelation within the Standard

- Policy:
  - ➤ Forms the basis for Commitment to Compliance with Legislation, Regulations, and Other Requirements.

Legal and Other Requirements Interrelation within the Standard

- Environmental Aspects:
  - Must identify legal & other requirements and determine how they apply to environmental aspects.
- Objectives and Targets:
  - In establishing and reviewing objectives, the organization is required to include consideration

Legal and Other Requirements Interrelation within the Standard

- Implementation and Operation:
  - ➢Requirements for Training, Awareness, and Competence for Identifying and Evaluating Legal and Other Requirements.
  - ➢Requirements for Internal Communication (of new regulatory requirements or significant changes to activities, products, and services).
  - ➢Requirements for Emergency Preparedness and Response.

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Legal and Other Requirements Interrelation within the Standard

- Checking & Corrective Action:
  - Requires a Procedure for Periodically Evaluating Compliance with Legal and Other Requirements.
  - Requires Management and Proper Retention

Legal and Other Requirements Interrelation within the Standard

- Management Review:
  - Inputs shall include:
    - Results of evaluations of compliance with legal & other requirements
    - Changing circumstances, including developments in legal & other requirements related to its environmental aspects
    - Environmental performance

Legal and Other Requirements Documentation

- Procedure:
  - How to identify legal & other requirements
  - How/where to access requirements
  - How to stay up to date
  - How to determine how these requirements relate to environmental aspects
  - Responsibilities

Legal and Other Requirements Documentation

- Compliance Calendar
  - Requirements and when they are due

- Legal & Other Requirements Table/List
  - Listing of regulatory requirements per environmental aspect category (i.e., hazardous waste) and where to access each
  - Should include federal, state, and local
  - Don't forget "other" requirements

Example Legal & Other Table

APPLICABLE REQUIREMENT/ ASPECT/ACTIVITY	REQUIREMENT/ REGULATORY CITATION	ACCESS LOCATION/ SOURCE
GENERAL REQUIREMENTS		
ISO 14001:2004(E)	N/A	Environmental Files
Signatory Authority	40 CFR 70 40 CFR 122 40 CFR 144 40 CFR 270 40 CFR 403	www.epa.gov
HAZARDOUS & SOLID WASTE		
Identification and Listing	40 CFR 261	www.epa.gov
Reportable Quantity Releases involving Hazardous Materials	40 CFR 117 40 CFR 302 40 CFR 355	www.epa.gov
Universal Wastes	40 CFR 273.13 – 273.39	www.epa.gov
Used Oil Generation	40 CFR 279.10(f) 40 CFR 279.22	www.epa.gov

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How an EMS drives compliance

- Environmental Policy:
  - ➢ Forms the basis for Commitment to Compliance with Legislation, Regulations, and Other Requirements

How an EMS drives compliance

- Planning:
  - ➢ Identify legal & other (corporate, industry, etc.) requirements
  - ➢ Establish a procedure to identify and keep legal requirements up-to-date
  - ➢ Identify significant environmental aspects
  - ➢ Set objectives & targets, programs
  - ➢ Management of Change

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How an EMS drives compliance

- Implementation and Operation:
  - Training
  - Communication
  - Procedures, instructions, and operational controls to ensure compliance
  - Emergency Preparedness

How an EMS drives compliance

- Checking & Corrective Action:
  - Performance Monitoring
  - Compliance Audits and System Audits
  - Corrective & Preventive Actions
  - Environmental Records Management

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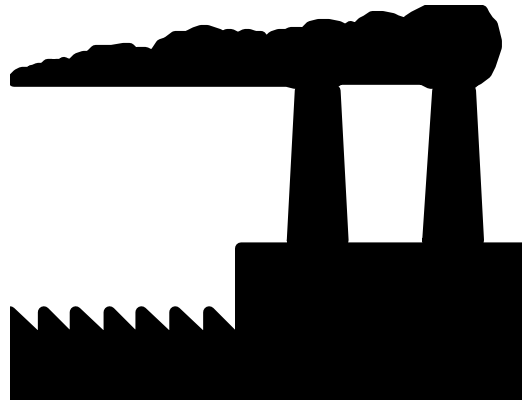Engineers • Scientists
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ENVIRONMENTAL ASPECTS

Environmental Aspect

Definition ISO 14001:2004

Element of an organizations activities, products or services that can interact with the environment.
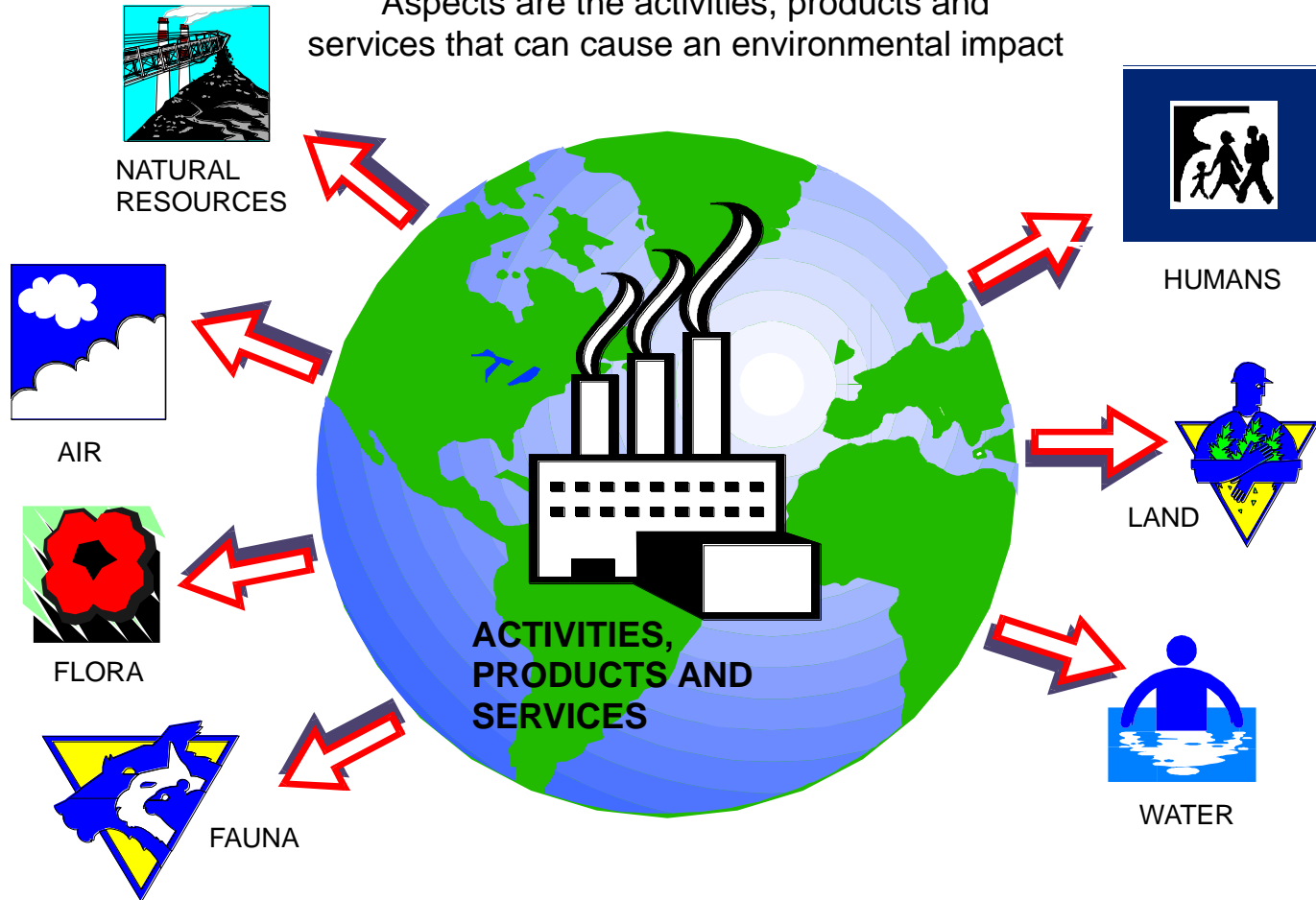
Environmental Impact

Definition: ISO 14001:2004

Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's environmental aspects.

(The change to the environment as a result of the aspect)

ASPECTS & IMPACTS

Aspects are the activities, products and services that can cause an environmental impact

Aspect vs. Impact

The relationship between environmental aspects and impacts is one of **cause and effect**.

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Environmental Aspects

- Identify environmental aspects
- Select what the organization can control/influence
- Set significance criteria
- Determine aspects with significant impacts
- Keep up-to-date

Significant aspects must be taken into account in establishing, implementing, and maintaining the EMS.
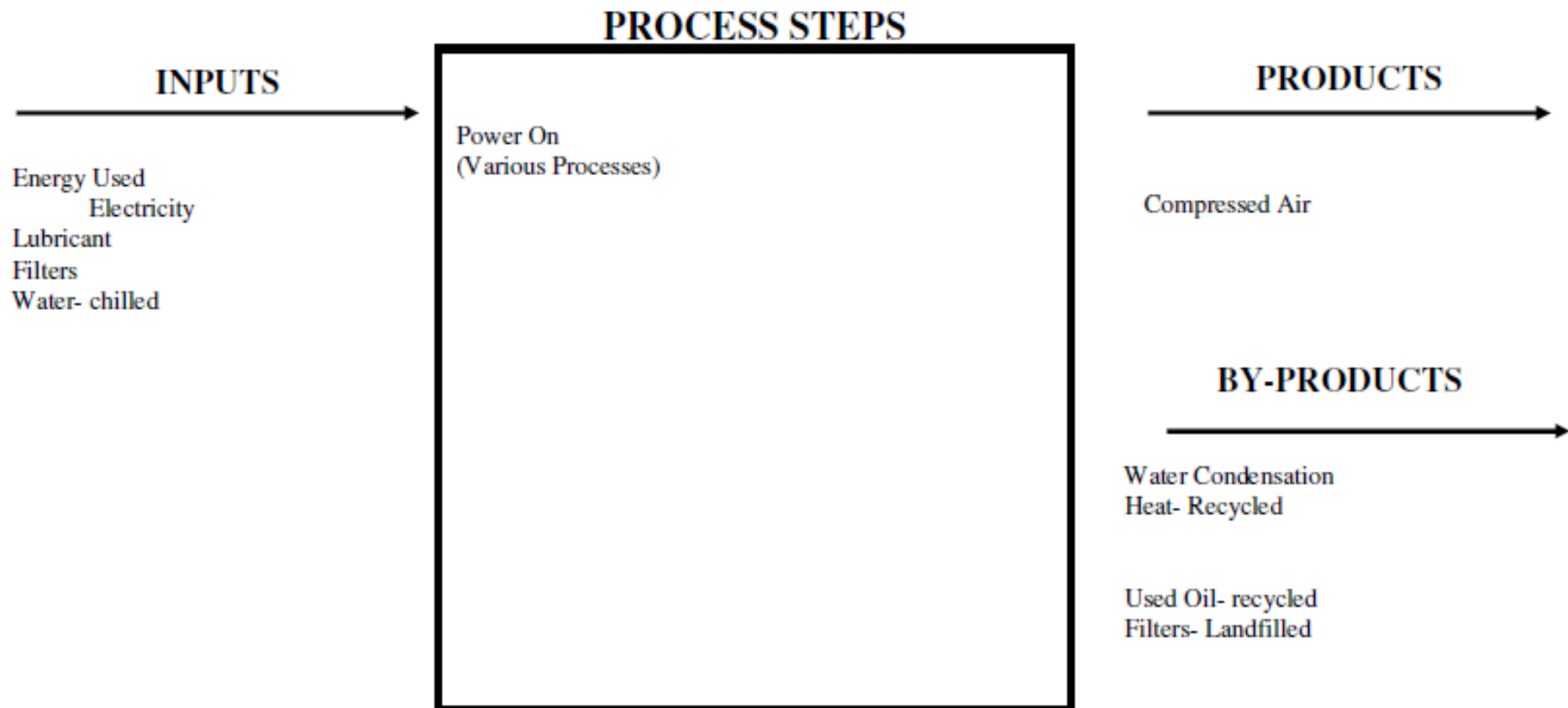
Environmental Aspects

Getting started

- Examine the entire organization
  - By department, by product, by process
- Create list of aspects that affect the environment
  - Through flowcharting
  - Through brainstorming
  - Through evaluation of processes
  - Utilize employees
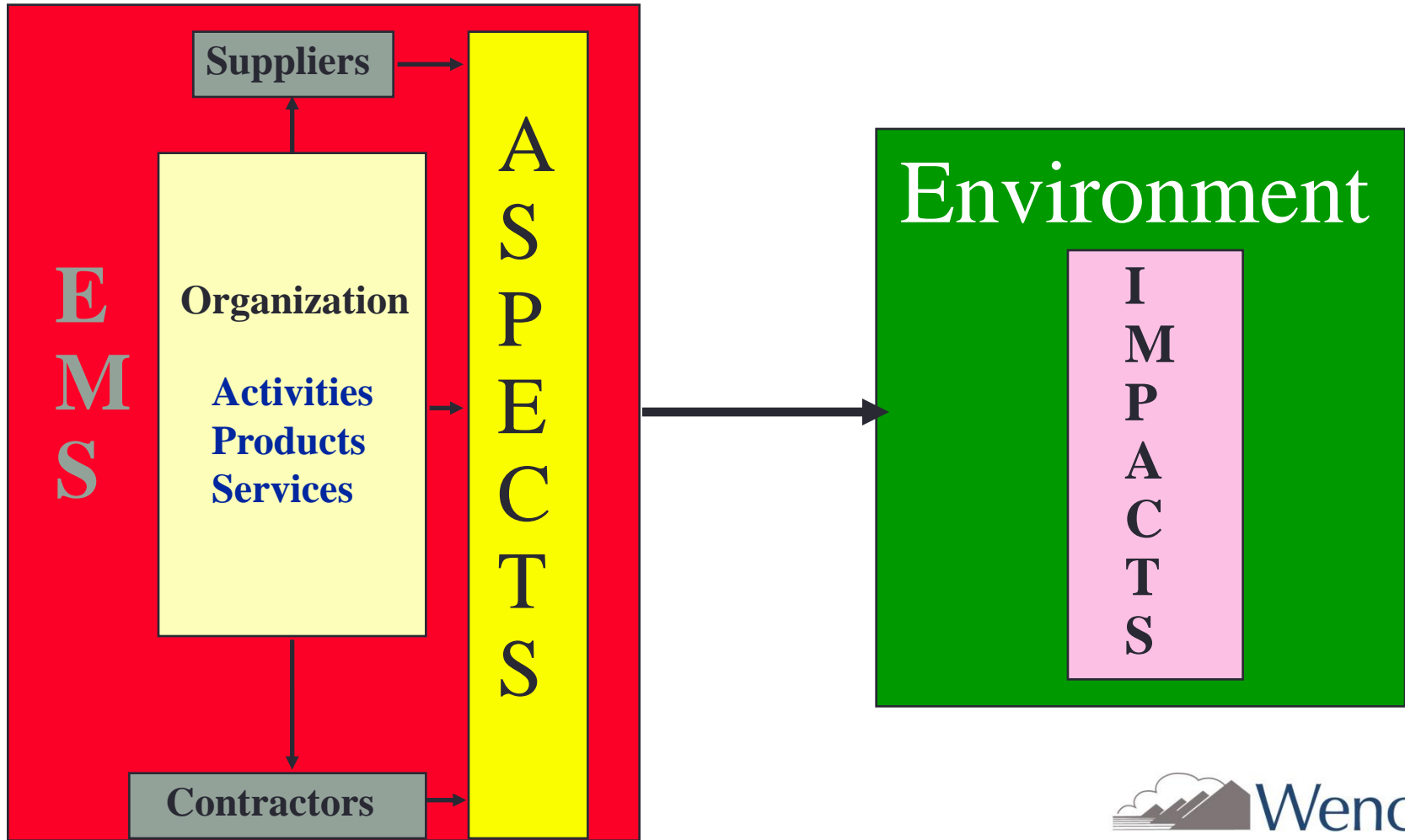
Aspects: Inputs and Outputs

Major Activity / Operation: Air Compressors _____

PROCESS STEPS

INPUTS →

Power On
(Various Processes)

Energy Used
     Electricity
Lubricant
Filters
Water- chilled

PRODUCTS →

Compressed Air

BY-PRODUCTS →

Water Condensation
Heat- Recycled

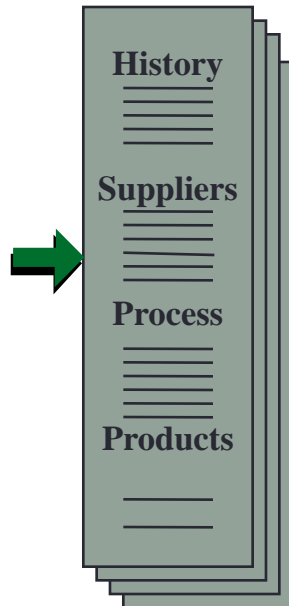Used Oil- recycled
Filters- Landfilled

Aspects and Impacts

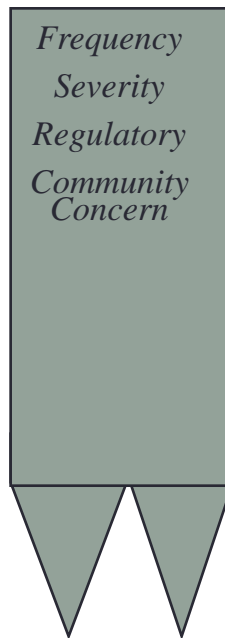# Environmental Aspects and Impacts – Basic Steps

- Identify all environmental aspects

- Identify all associated environmental impacts

- Undertake "scoring" for each impact

- Results in a "score" for each aspect

- Allocate significance - threshold/cut-off point

- Produce register of environmental aspects and significant environmental aspects (SEAs)
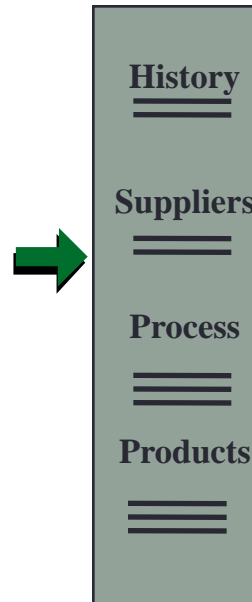
How SEAs feed the EMS

Environmental aspects → **Significance scoring** → **Significant aspects** → **EMS core elements** (selection)

Environmental aspects:
- History
- Suppliers
- Process
- Products

Significance scoring:
- *Frequency*
- *Severity*
- *Regulatory*
- *Community Concern*

Significant aspects:
- History
- Suppliers
- Process
- Products

EMS core elements (selection):
- Policy
- Objectives & targets
- Training Awareness
- Operational control
- Auditing
- Reviewing

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Examples of Aspects

- Energy usage

- Water consumption

- Raw material selection and usage

- Air emissions

- Wastewater

- Solid waste generation

- Aspects are the inputs and outputs of your activities and processes

Impact Categories

- Impacts to:
  - Air Quality (AQ)
  - Land Quality (LQ)
  - Water Quality (WQ)
  - Natural Resources (NR)
  - Human Health (HH)

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Tips

- Identify aspects for each major process/activity
- Combine similar or like processes into one category, if the aspects are the same
  - Example: a plant has 3 extrusion lines, same aspects for each
- Combine common aspects into one company-wide category (i.e., office activities)
- Identify aspects under both normal and abnormal (or emergency) conditions

Don't forget…

- Maintenance

- Contractor activities

- Fleet operations

- Shipping/receiving

- Mobile equipment

- Abnormal conditions

- More important to be consistent than to be "right"

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Significance Scoring

- Choose a significance scoring system to apply to aspects
- Choose categories/scale for scoring
- Choose formula for calculating significance

Significance Scoring Example

- Impact scored from 1 (least) to 5 (highest) for each criterion
- Criteria categories
  - Frequency (F)
  - Severity (S)
  - Regulatory (R)
  - Community Concern (C)
- Overall significance score (SS) is product of individual criterion scores
  - F x S x R x C = SS
  - A "5" regulatory is automatically significant

Environmental Aspects Workshop

- Choose an example site/operations.

- List the environmental aspects (by input and output) for the key activities/processes.

- Identify the associated environmental impacts.

- Rank the aspects/impacts for significance using the criteria provided.

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