


Management Systems Overview for the Hazardous Materials Professional

CHMM Overview Workshop

March 18, 2010

Loren Larson, CHMM

Caltha LLP, Minneapolis, MN


Management System

An organized approach
to achieving
a specific outcome.

Environmental Management System (EMS)

Part of an organization's management system used to develop and implement its environmental policy and manage its environmental aspects.

Convergence of Four Paths

1. U.S.A. Laws & Regulations
2. Quality Management
3. International Organization for Standardization
4. International Environmental Movement

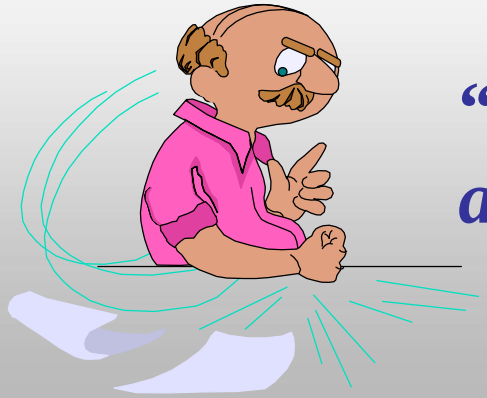
U.S.A. Laws & Regulations

Regulations
(Permitting and Operational Compliance)

- Hazardous Waste Generator Program
- Title V Air Quality Permit
- NPDES Wastewater Permit
- OSHA HazCom Program
- DOT HazMat Program
- OSHA BBP
- PSM Program

Old-Era EMS

- U.S.A. Laws & Regulations
- Any facility striving to meet environmental/H&S regulations undoubtedly has some form of Management System
- In most cases, MS designed to respond to legal requirements, such as permits, Federal Regulations, etc. (i.e., very "*compliance driven*")



"How a business has to run, at a minimum!"

"*Compliance Management System*"

Quality Models

- Zero defects
- PDCA
- Continual improvement

- Say what you do
- Do what you say
- Prove it
- *Prove that its effective!*
- *Continually improve*

"Plan - Do - Check - Act"

New EMS Models

Business Concepts

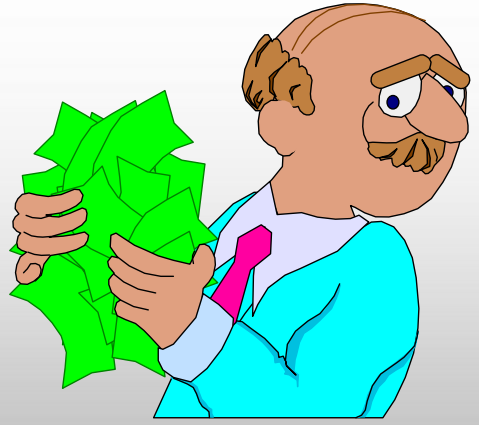
- Vision
- Goals
- Objectives
- Targets

- Strategic Business Plan

- Management Review

New-Era EMS

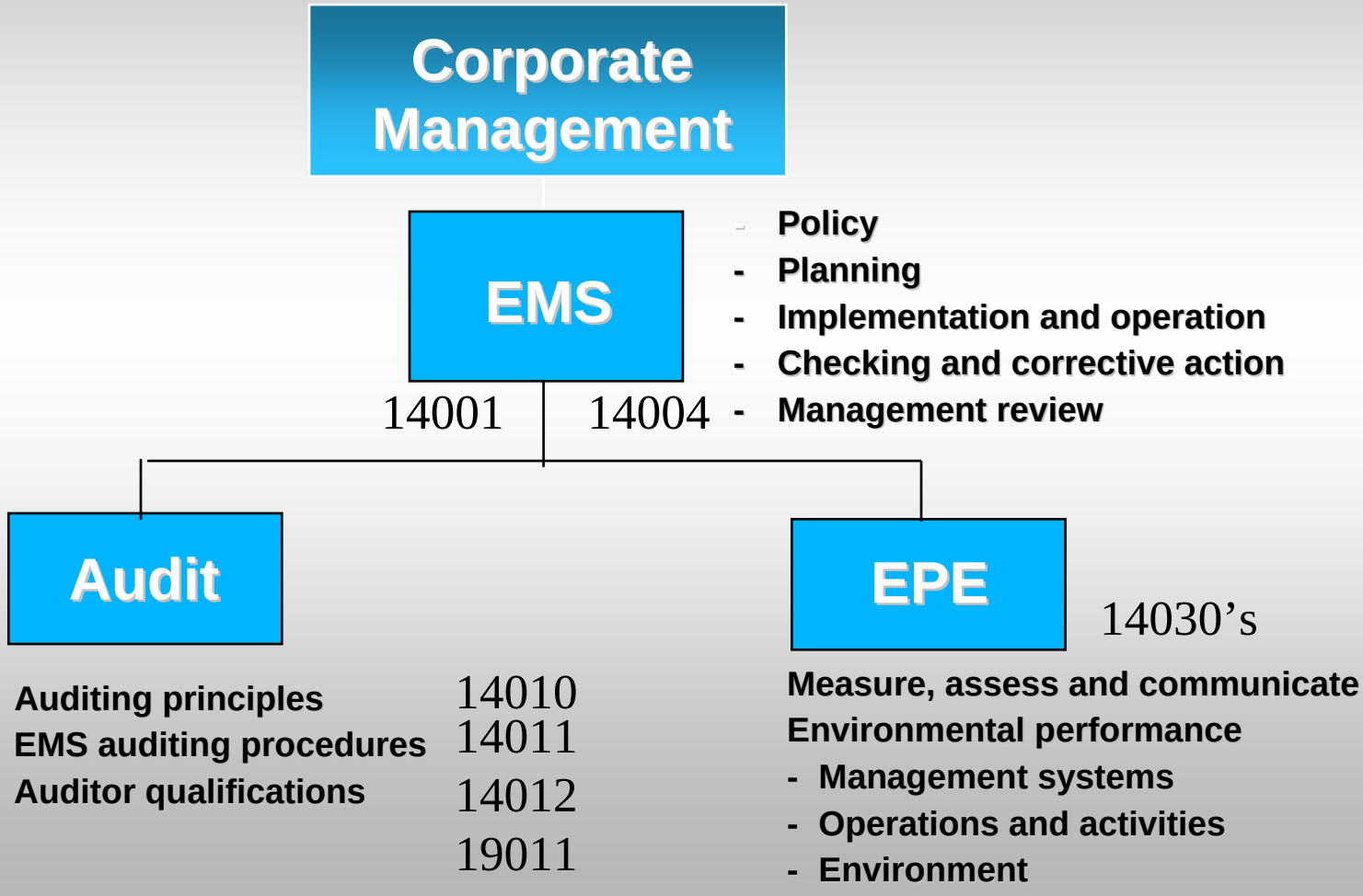
- Quality Models
- Business Concepts



"How a business should run, at an optimum!"

EMS have evolved as a direct influence of QMS

ISO Organization Evaluation Standards



Why use ISO-14001 as Benchmark?

- Most recognized
- Most flexible
- Based on international consensus
- Based on well known predecessors
- Can be verified (registered) by third party

Health & Safety Management Systems

- **OSHA VPP**
- **BS 8800:1996**
  The British Standard for Occupational Health and Safety Management Systems
- **OHSAS 18001:1999**
  Occupational Health and Safety Management Systems Specifications
- **OHSAS 18002:2000**
  Occupational Health and Safety Management Systems. Guidelines for the implementation of OHSAS 18001
- **U.S. DOE ISMS**

Industry-Focused Models

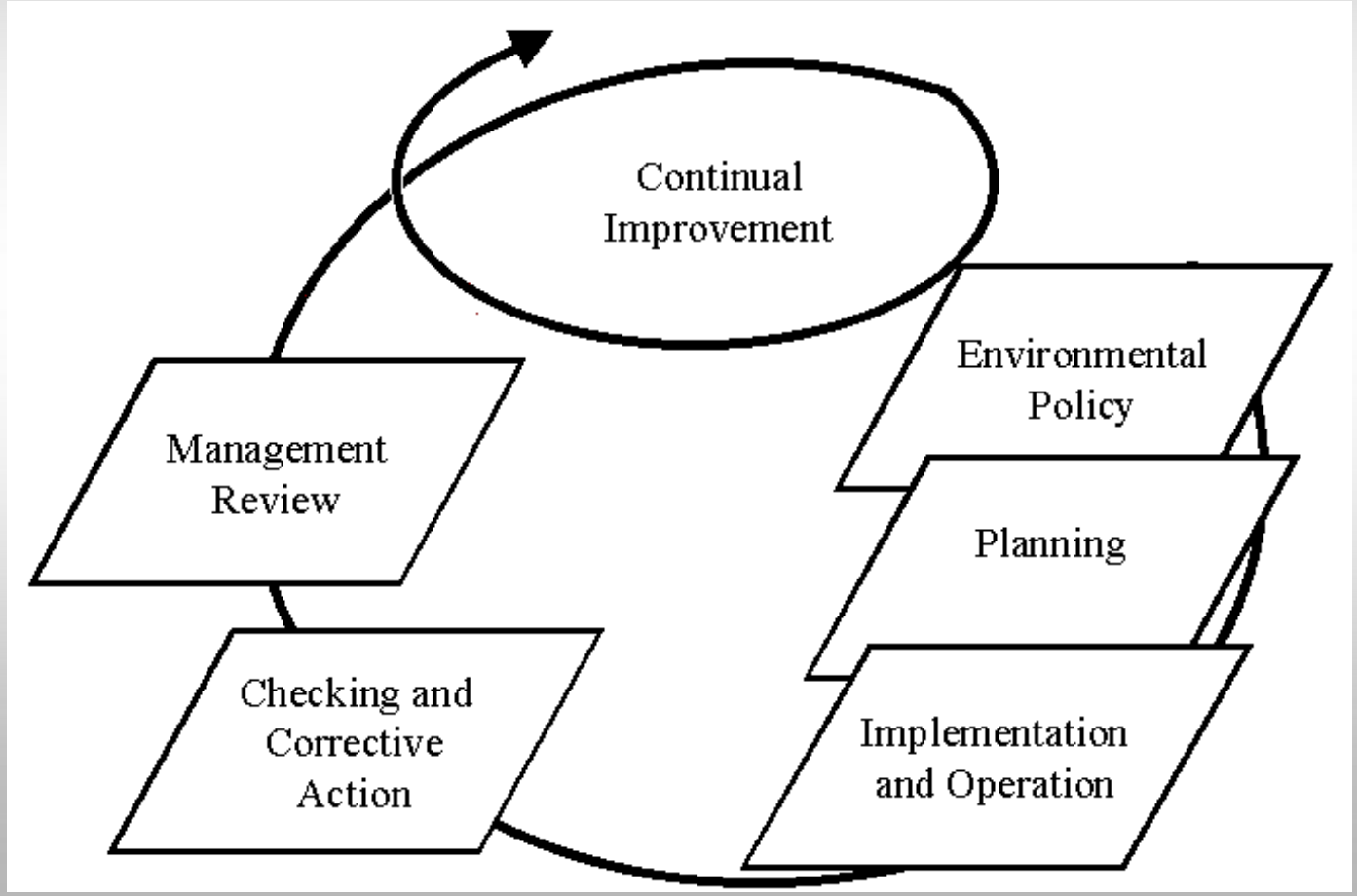
- **Chemical Industry**
  - CMA Responsible Care "RC-14001:2002"
- **Agribusiness**
  - WI DNR
  - U.S. EPA
  - N.C. - Pork Producers
- **Automobiles**
  - QS-9000/QS-14001→ TS-16949
- **Agency Enforcement / Flex Permits**
  - U.S. EPA
  - Pennsylvania, Texas
  - MPCA EMS-Based Air Permit

Differences Between ISO 14001 EMS and ISO 9000 QM Series

Key Differences

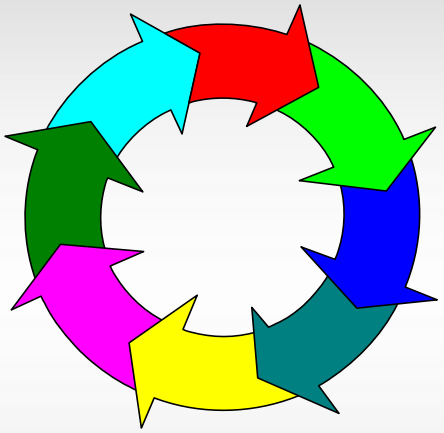
- ***Flexibility:*** ISO-14001 less defined
- ***Scope:*** governed by environmental aspects
- ***Policy:*** specific commitments (legal, P2, CQI)
- ***Customer vs. stakeholder:*** broader concept
- ***Planning:*** environmental aspects, significant impacts, environmental objectives and targets, legal and other requirements

ISO-14001 EMS Model



ISO-14001 Specification Structure and Core Elements

- §1. EMS Scope
- §3. Definitions
- §4.2 Environmental policy
- §4.3 Planning
- §4.4 Implementation & operation
- §4.5 Checking & corrective action
- §4.6 Management review



§ 4.2 Policy

- "The Management System Driver"
- Management's declaration of commitment to the environment
- Relevant to environmental impacts of organization's activities, products and services
- Framework for environmental objectives and targets
- Available to Interested Parties (Internal & External)
- Commitment to:
    1. Legal Compliance
    2. Prevention of Pollution, and
    3. Continual Improvement

§ 4.3 Planning

- Aspects/impacts
- Legal requirements
- Goals, objectives, targets
- Programs

Environmental Aspects

Consider:

- Air emissions
- Water effluents
- Solid/hazardous waste generation
- Contamination of land
- Noise, vibration and odor
- Land use, energy use, water use
- Raw material and resource use
- Positive environmental impacts

Significant Aspects

- Establish and maintain procedures to identify your environmental aspects in order to determine those which can have a significant impact on the environment.
- Rank aspects and impacts in order to assess their significance

<u>Significant Environmental Aspects</u> require management within EMS:

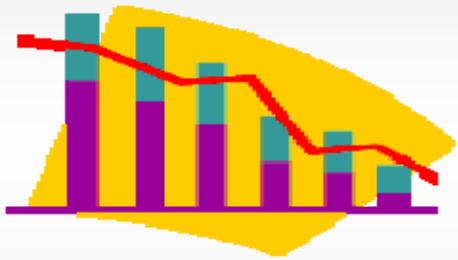
Written procedures
Contractor Requirements
Other

Legal Environmental Requirements

- **Setting legal framework for the EMS**
  - Identify and access legal requirements and "*other requirements*"
  - Keep up-to-date
  - Communicate to the right people

Objectives & Targets

- Establish and maintain environmental objectives and targets.



- Could include commitment to:
  - reduce waste
  - reduce or eliminate release/spill of a pollutant
  - design product/operations to minimize environmental impact in production, use, and disposal.

§ 4.4 Implementation & Operation

- Structure and responsibility
- Training, awareness & competence
- Communications
- Documentation
- Operational controls
- Emergency preparedness & response

Training, Awareness & Competence

- Need to identify training needs
- All employees and contractors must be aware of basic EMS structure
  - Environmental policy
  - Objectives
  - Significant environmental aspects
- Need to evaluate and document that employees and contractors are trained and are competent to perform tasks which involve SIGNIFICANT ENVIRONMENTAL ASPECTS

Operational Controls

- Activities involving SIGNIFICANT ENVIRONMENTAL ASPECTS
- Activities must be planned and have documented procedures

§ 4.5 Checking and Corrective Action

Similar to ISO-9001

- Monitoring and measuring
- Nonconformance/Corrective actions
- Records
- Compliance audits
- EMS audits

Checking and Corrective Action

Monitoring and Measuring – How are you doing?

- Establish procedures to monitor and measure key Environmental Performance Metric
- Track how well the system is working
- Analyze and correct root causes of problems

EMS Internal Auditing

- System auditing vs. Compliance auditing

§ 4.6 Management Review

- Review information to evaluate EMS
  - Results of audits
  - Performance relative to key metrics
  - Other
- Top level review to ensure EMS is:
  1. Suitable
  2. Adequate
  3. Effective
- Consider changes

Summary

1. All businesses have some form for “environmental management system”
2. Although ISO 14001 is the most widely recognized, there are many specifications for EMS
3. ISO 14001 provides a good source for ideas organizations can use to improve existing EMS
4. The structure of ISO 14001 is based on quality management models
    - Plan-Do-Check-Act
5. ISO 14001 emphasizes:
    - Written procedures
    - Training
    - System audits
    - Corrective action
6. Effective EMS includes contractors and vendors
7. Management ultimately determines if EMS is working as intended

For More Information

- Caltha LLP Environmental Management Systems
- Caltha LLP Compliance Services
- Caltha LLP EH&S Auditing

Loren Larson, CHMM
(763) 208-6430
llarson@calthacompany.com