ISO 14001 Environmental Management System (EMS) Implementation Training

Iowa Department of Natural Resources
December 15, 2020

Presented by:
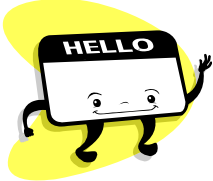
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Burns & McDonnell	Burns & McDonnell

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Welcome and Introductions

- Instructor Introductions
- Name
- Where do you work?
  - Title/Department/Facility
- What is your experience with:
  - EMS?
  - ISO 14001?
  - Environmental Compliance?
  - Audits?
- What do you hope to get out of this training?

HELLO

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Training Agenda

- Day 1
  - Welcome & Introductions
  - Overview of EMS/ ISO 14001 Background
  - Intro to ISO 14001 Standard
- Day 2
  - EMS Implementation Step-by-Step
    - Primary chronological steps to EMS development and implementation
    - Walk-through the major EMS components, how to develop, and provide examples
  - "Environmental Aspects" Workshop: Identifying Environmental Aspects & Impacts and Defining Significance

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Training Agenda

- Day 3
  - Audit Process
  - Internal Auditing
    - Exercise: Open-Ended Questions
    - Workshop: Objective Evidence
- Day 4
  - Nonconformities
    - Workshop: Writing Nonconformities
  - Root Cause and Corrective Action
    - Workshop: Is the Corrective Action Appropriate?
  - ISO 14001 Certification Process
  - Success Stories
  - Wrap-up

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What is an EMS?

Environmental Management System (EMS):
- Framework to proactively manage activities in order to:
  - Control and minimize impacts to the environment;
  - Comply with environmental laws, regulations, voluntary requirements;
  - Continually improve environmental performance.

- Can be certified to ISO 14001
- Even organizations which do not choose to certify typically follow the ISO 14001 model
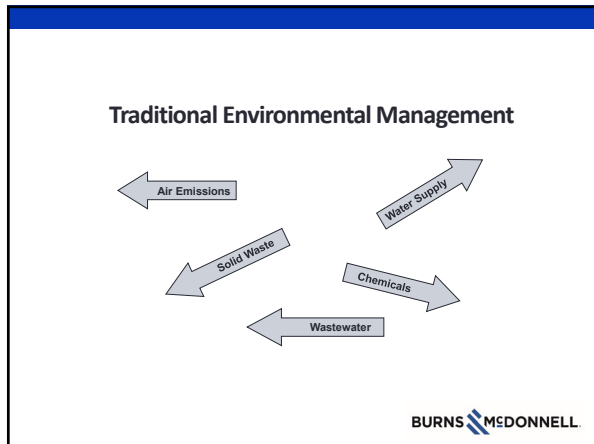
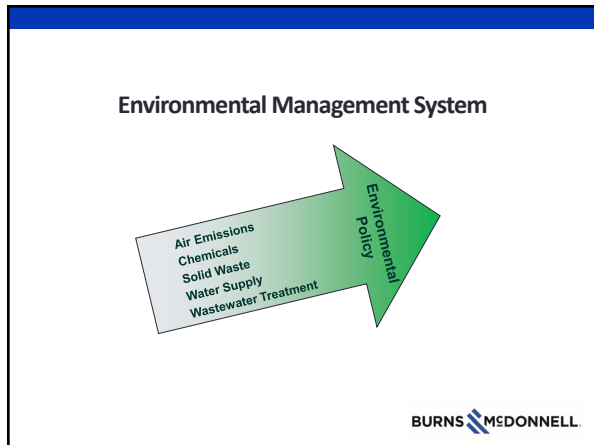**BURNS McDONNELL**

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Keys to a Successful EMS

- Provides a framework for handling challenges and managing change
- Top-down commitment
- This is our compliance program
- Incorporation of EMS into day-to-day business operations
- Involvement at various functions and levels
- Objectives which drive continual improvement and cost savings

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Traditional Environmental Management

Air Emissions
Water Supply
Solid Waste
Chemicals
Wastewater

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Environmental Management System

Air Emissions
Chemicals
Solid Waste
Water Supply
Wastewater Treatment

Environmental Policy

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EMS Benefits

BEFORE	AFTER
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

Key Benefits: Increased efficiency, reduced risk/cost, improved performance
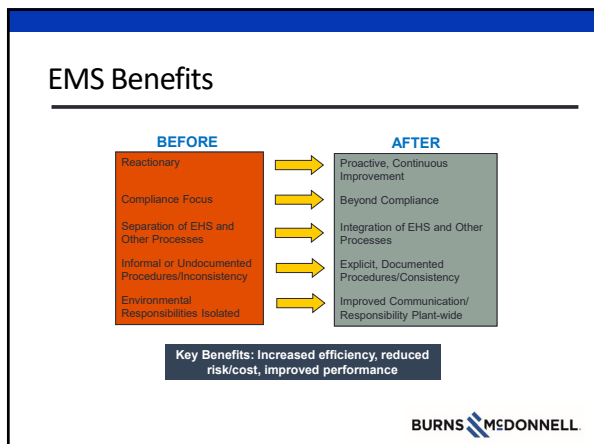
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Key Drivers for EMS/ISO 14001

- Internal – desire for:
  - More proactive management of environmental risks
  - Reduced liability
  - Cost savings
  - Improved performance
  - Continuity tool to help ensure continued compliance and performance

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Key Drivers for EMS/ISO 14001

- External:
  - Competitive advantage
  - Customer influence or demand
  - Community interest
  - Enhance public image as a green, sustainable partner
  - Insurance, banking, stock price

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ISO 14001

- THE international standard for EMS.
- Over 250,000 certificates issued in 155 countries.
- Top 3 countries: China, Japan, Spain.
- <3% ISO 14001 certificates in North America.
- Can certify individual site or multi-site.

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ISO 14001 Certifications

- Individual site EMS
  - Organization of facility environmental management efforts

- Multi-Site EMS
  - Standardization across the multi-site organization
  - Elements of customization at each facility, but with multi-site oversite
  - Sharing of lessons learned

- Keys to Success:
  - Understanding standard and unique business processes, company culture, gaps/opportunities.
  - There is no one size fits all

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What is the ISO?

- International Organization for Standardization
- Founded 1946
- Representatives from 160+ countries
- American National Standards Institute (ANSI) – U.S. representative

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ISO 14001 Background

- Drivers for development of ISO 14001:
  - Success of ISO 9001 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
- Strategic Action Group on the Environment (SAGE) formed in 1991 to determine whether an environmental standard could:
  - Achieve a common approach to environmental management
  - Enhance an organization's ability to attain and measure environmental performance
  - Facilitate trade / Remove barriers

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Status of ISO 14001 Revisions

- Original version ISO 14001:1996
- First revision ISO 14001:2004 – very similar to the 1996 version
- Current version ISO 14001:2015
  - Complete overhaul in line with "High Level Structure"
  - Released September 2015
  - 2015 standard expected to be valid 10-15 years

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High Level Structure – Annex SL

All ISO standards were revised to follow the "High Level Structure" for Management System Standards (MSS).

Identical core text and common terms.

Intended to make it easier to implement multiple systems.
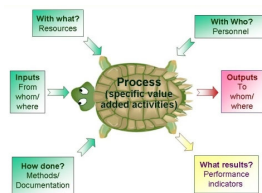
Promotes integration among systems.

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Process Approach

Understanding and managing interrelated processes as a system contributes to effectiveness and efficiency in achieving intended results.

Fewer requirements for documented procedures, manual, etc.

With what?
Resources

With Who?
Personnel

Inputs
From whom/ where

Process
(specific value added activities)

Outputs
To whom/ where

How done?
Methods/ Documentation

What results?
Performance indicators

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Introduction to the ISO 14001 Standard

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Overview

This is a *Process*, not a Performance Standard

First three clauses are generally administrative in nature:
- Clause 1 - *Scope*
- Clause 2 - *Normative References*
- Clause 3 - *Definitions*

Clauses 4-10 define the EMS requirements

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Clause 1 - Scope

- Applicable to *any organization that wishes to:*
  - Enhance its environmental performance
  - Manage its environmental responsibilities to contribute to sustainability
  - Achieve the intended outcomes of the EMS
- The intended outcomes of the EMS include:
  - Enhancement of environmental performance
  - Fulfilment of compliance obligations
  - Achievement of environmental objectives

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Clause 2 - Normative References

- There are no normative references at present

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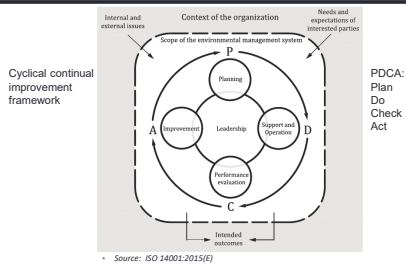## Clause 3 – Terms and Definitions

Key definitions:
- Environmental Policy
- Interested Party
- Environment
- Environmental aspect
- Environmental impact
- Objective
- Compliance Obligations
- Risk
- Continual Improvement

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ISO 14001:2015 Framework

Internal and external issues

Context of the organization

Needs and expectations of interested parties

Scope of the environmental management system

Cyclical continual improvement framework

P

Planning

A Improvement Leadership Support and Operation D

Performance evaluation

C

Intended outcomes

PDCA:
Plan
Do
Check
Act

- *Source: ISO 14001:2015(E)*

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4 Context of the Organization

- 4.1 Understanding the organization and its context
- 4.2 Understanding the needs and expectations of interested parties
- 4.3 Determining the scope of the EMS
- 4.4 EMS

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4 Context of the Organization

External and internal issues that could impact your EMS:
- Environmental conditions (climate, water quality, land use, etc.)
- Cultural, social, political, regulatory, economic circumstances
- Internal characteristics or conditions of the organization
  - Activities, products, services
  - Strategic direction
  - Culture
  - Capabilities

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4 Context of the Organization

- Identify interested parties (i.e., customers, employees, community, regulators, interest groups, Board of Directors, etc.).
- Relevant needs and expectations of these interested parties and stakeholders.
- Which of these become compliance obligations?

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4 Context of the Organization

- When establishing the EMS scope, a number of specified items must be considered.
- Scope must be documented and available to interested parties.
- Elevated focus on processes.

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5 Leadership

Entire clause dedicated to leadership roles and responsibilities.

5.1 Leadership and commitment
- Specifies ways leadership is to demonstrate commitment to the EMS.
- Top-down accountability for the effectiveness of the system.
- Ensure integration of EMS into business processes.
- Provide resources and support.

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5 Leadership

- 5.2 Environmental Policy
  - Commitments to
    - Protection of the environment
    - Compliance
    - Continual improvement

- 5.3 Organizational roles, responsibilities and authorities
  - "Management representative" no longer required, but the roles/responsibilities are still there.

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6 Planning

- 6.1 Actions to address risks and opportunities
  - 6.1.1 General
  - 6.1.2 Environmental aspects & Assessment of risks and opportunities
  - 6.1.3 Compliance obligations / Legal and other requirements
  - 6.1.4 Planning Action

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6 Planning

- Consider internal/external issues and needs/ expectations of interested parties when planning.
- Identify Risks and Opportunities related to:
  - Environmental aspects
  - Compliance obligations
  - Other issues
- Document the Risks and Opportunities that need to be addressed.

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6 Planning

- Environmental Aspects
  - Consider a life-cycle perspective
  - Must take into account abnormal conditions and emergency situations
  - Determine which aspects/impacts are significant (SEAs)
- Compliance obligations
  - Determine what the obligations are and how they apply to the organization
  - Maintain documented information of compliance obligations

Take actions to address SEAs, compliance obligations, risks/opportunities.

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6 Planning

- 6.2 EHS Objectives and planning to achieve them
  - 6.2.1 Environmental Objectives
    - Consider risks & opportunities
    - Consistent with the policy
    - Must be measurable
    - Must monitor, communicate, update
  - 6.2.2 Planning actions to achieve objectives
    - Resources required, responsibilities, and what/how/when it will be done
    - Determine how results will be evaluated
    - Consider how to integrate objectives in the organization's business processes.

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7 Support

Resources
- Determine and provide needed resources.

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7 Support

- Competence
  - Includes employees and those doing work under the organization's control
  - Ensure competent on basis of education, training, and/or experience
  - Identify training needs
  - Appropriate documentation must be kept as evidence of competence

COMPETENCE

EXPERIENCE   KNOWLEDGE   SKILLLS   BEHAVIOR   PERFORMANCE   GOALS

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7 Support

- Awareness
  - Those doing work under the organization's control must be aware of:
    - Environmental policy
    - Significant environmental aspects/impacts associated with their work
    - Their contribution to the effectiveness of the EMS, including the benefits of enhanced environmental performance
    - Implications of not conforming to EMS requirements, including compliance obligations

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7 Support

Communication
- Need to have processes on what/when/with whom to communicate
- Take into account compliance obligations, ensure consistent with EMS and reliable.
- The organization must respond to relevant communications on its EMS and must keep records as evidence of its communications, as appropriate.
- Internal:
  - Communicate information relevant to the EMS among various levels and functions, including changes.
  - Enable employees/contractors to contribute to continual improvement.
- External:
  - Communicate information relevant to the EMS per communication processes and compliance obligations.

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7 Support

Documented Information
- "Documented information" replaces the terms documents and records
- Ensure appropriate identification and description, format and media, and review for suitability and adequacy
- The organization shall address
  - Distribution, access, and retrieval
  - Storage and preservation (including legibility)
  - Shall have version control
  - And retention and disposition.
- No reference to manual, procedures, etc.

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8 Operation

- 8.1 Operational planning and control
  - Controls can include engineering controls and procedures
  - Control planned changes and review/mitigate consequences of unintended changes
  - Ensure outsourced processes are controlled or influenced
  - Consistent with a life cycle perspective:
    - Ensure environmental requirements are addressed in design and development
    - Determine requirements for procurement
    - Communicate relevant requirements to external providers, including contractors
    - Consider need to provide info on potential impacts related to transportation, use, end-of-life treatment, and final disposal of products and services.

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8 Operation

- 8.2 Emergency preparedness and response
  - Shall plan actions to prevent or mitigate impacts from emergency situations
  - Periodically review and revise processes, particularly after emergency situations or tests
  - Provide relevant information and training to relevant interested parties

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9 Performance Evaluation

- 9.1 Monitoring, measurement, analysis, and evaluation
  - 9.1.1 General
    - Monitor, measure, analyze, and evaluate environmental performance and effectiveness of EMS
    - Determine what/how/when monitored and evaluated
    - Ensure monitoring equipment is calibrated or verified
    - Communicate relevant environmental performance information (internally and externally) per processes and compliance obligations
    - Retain records as evidence of the results

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9 Performance Evaluation

- 9.1.2 Evaluation of compliance
  - Determine frequency, evaluate, take action
  - Maintain knowledge and understanding of compliance status
  - Typically in the form of a compliance audit
  - Keep records as evidence

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9 Performance Evaluation

- 9.2 Internal audit
  - Establish internal audit program
    - Frequency
    - Methods
    - Responsibilities
    - Planning requirements
    - Reporting
  - Take into account:
    - Environmental importance of process
    - Changes affecting the organization
    - Results of previous audits

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9 Performance Evaluation

- 9.2 Internal audit
  - Define the audit criteria and scope
  - Select auditors to ensure objectivity and impartiality of the audit process
  - Ensure reporting of the audit results to management
  - Retain records as evidence of implementation of the audit program and audit results.

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9 Performance Evaluation

- 9.3 Management review
  - Top management must review the EMS at planned intervals.
    - Suitability
    - Adequacy
    - Effectiveness
  - Organization decides frequency, but typically should be at least once per year.
  - All topics do not have to be covered in all meetings, but each should be addressed at least once per year.

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9 Performance Evaluation

- 9.3 Management review – what to include?
  - Consider status of actions from previous management reviews
  - Consider changes in:
    - External & internal issues
    - Needs & expectations of interested parties
    - Compliance obligations
    - Significant environmental aspects
    - Risks & opportunities
  - Extent to which Objectives have been achieved

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9 Performance Evaluation

- 9.3 Management review – what to include?
  - Environmental performance, including trends in:
    - Nonconformities and corrective actions
    - Monitoring & measurement results
    - Fulfilling compliance obligations
    - Audit results
  - Adequacy of resources
  - Relevant communication from interested parties
  - Opportunities for continual improvement

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9 Performance Evaluation

9.3 Management review
- Outputs must include:
  - Conclusions on suitability, adequacy and effectiveness of the EMS
  - Decisions on continual improvement opportunities
  - Need for changes to EMS, including resources
  - Actions, if needed, when objectives not met
  - Opportunities to improve integration of the EMS with other business processes
  - Implications for the strategic direction of the organization
- Retain records as evidence of the results of management reviews.

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10 Improvement

- 10.1 General
  - Determine opportunities for improvement and implement actions to achieve intended outcomes
- 10.2 Nonconformity and corrective action
  - When a nonconformity occurs:
    - React and take action to control and correct it
    - Deal with the consequences
    - Evaluate need for corrective action to eliminate the root cause to avoid recurrence
    - Implement corrective action
    - Review effectiveness of actions taken
    - Make changes to the EMS if necessary
    - Maintain records

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10 Improvement

10.3 Continual improvement
- Continually improve the EMS to enhance environmental performance

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Questions?

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