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*Effective Transition to the ISO
14001:2015 Environmental
Management System Standard*

Air and Waste Management Association

*Southern Section Annual Meeting &
Technical Conference*

Biloxi, MS

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Overview

- Introduction
- Details Regarding the New ISO 14001:2015 Standard
 - ❖ Context of Organization
 - ❖ Life Cycle Perspective
 - ❖ Risks & Opportunity Evaluation
 - ❖ Stakeholder Needs & Expectations
 - ❖ Sustainable Development
- EMS Transition & Alignment
- Annex

What Types of Changes Have Occurred to ISO 14001?

➤ Structural

- ❖ Conform to new *P-D-C-A* structure being implemented across ISO standards

➤ Thematic

- ❖ Address improvement recommendations by ISO Study Group
- ❖ Increase focus on sustainability themes
- ❖ Enhanced emphasis on key objectives from ISO 14001:2004



ISO 14001:2004 Environmental Management System Management Review

Policy	Planning	Implementation & Operation	Checking
<ul style="list-style-type: none"> ▪ Compliance ▪ Pollution Prevention ▪ Continual Improvement 	<ol style="list-style-type: none"> 1. Environmental Aspects 2. Legal & Other Requirements 3. Objectives, Targets, & Programs 	<ol style="list-style-type: none"> 1. Resources, Roles Responsibilities, & Authority 2. Competence/Training/Awareness 3. Communication 4. Documentation 5. Document Control 6. Operational Control 7. Emergency Preparedness 	<ol style="list-style-type: none"> 1. Monitoring & Measurements 2. Compliance Evaluation 3. Nonconformity, Corrective & Preventive Actions 4. Audits 5. Records

ISO 14001:2015

Red = New Requirements
Blue = Changed Requirements

9 Performance evaluation

- 9.1 Monitoring, measurement, analysis and evaluation
 - 9.1.1 General
 - 9.1.2 Evaluation of compliance
- 9.2 Internal audit
- 9.3 Management review

10 Improvement

- 10.1 General
- 10.2 Nonconformity and corrective action
- 10.3 Continual improvement

4 Context of Organization

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

Continual Improvement

8 Operation

- 8.1 Operational planning and control
- 8.2 Emergency preparedness and response

5 Leadership

- 5.1 Leadership and commitment
- 5.2 Environmental policy
- 5.3 Organizational roles, responsibilities and authorities

7 Support

- 7.1 Resources
- 7.2 Competence
- 7.3 Awareness
- 7.4 Communication
 - 7.4.1 General
 - 7.4.2 Internal communication
 - 7.4.3 External communication
- 7.5 Documented information
 - 7.5.1 General
 - 7.5.2 Creating and updating
 - 7.5.3 Control of documented information

6 Planning

- 6.1 Actions to address risks and opportunities
 - 6.1.1 General
 - 6.1.2 Significant environmental aspects
 - 6.1.3 Compliance obligations
 - 6.1.4 Planning to take action
- 6.2 Planning actions to achieve environmental objectives
 - 6.2.1 Environmental objectives
 - 6.2.2 Planning actions to achieve environmental objectives

New
PDCA
Structure

Key ISO 14001 Thematic Changes

Area	More emphasis compared to current version of ISO 14001
Strategic environmental management	<ul style="list-style-type: none">• Ensuring that environmental issues are addressed in strategic planning• Integrating the EMS into the site's business model
Leadership	<ul style="list-style-type: none">• Increasing accountability among management team
Protecting the environment	<ul style="list-style-type: none">• Implementing proactive initiatives – P2, sustainable resource use, climate change mitigation, biodiversity
Environmental performance	<ul style="list-style-type: none">• Improving environmental metrics by establishing measurable performance indicators• Focusing on outcomes and results• Deploying risk-based thinking to reduce impacts
Life cycle thinking	<ul style="list-style-type: none">• Examining life cycle impacts of products and services
Communications	<ul style="list-style-type: none">• Focusing on identifying stakeholder needs & expectations• Improving outreach to address stakeholder concerns
Documentation	<ul style="list-style-type: none">• Recognizing the use of electronic systems• Flexibility in establishing procedures to ensure effective process control

Understand the Context of Your Organization

- Evaluate external and internal context
 - ❖ Issues or conditions that are relevant
 - ❖ Consider **environmental parameters**, **external issues**, and **internal conditions**
- Clarify the needs and expectations of interested parties
 - ❖ Identify 'interested parties'
 - ❖ Characterize their interest in environmental performance
 - ❖ Determine their needs with respect to environmental performance
 - ❖ Identify which needs equate to compliance obligations

Common Issues for Consideration

- Air quality management
 - Biodiversity & land use
 - Chemical management
 - Climate protection
 - Deforestation
 - Energy efficiency
 - Product toxicity
 - Product packaging & recycling
 - Renewable energy investment
 - Waste minimization & P2
 - Water & ocean impacts
 - Water scarcity
- *Impacted by key drivers?*
 - *Represent a potential problem area?*
 - *Leverage for beneficial effect?*
 - *Offer competitive advantage?*
 - *Material to stakeholders?*

Life Cycle Perspective

What is an LCA?

- Full spectrum approach for assessing environmental impacts from industrial, commercial and institutional systems
 - ❖ Cradle to grave
 - ❖ Cradle to gate
 - ❖ Gate to gate
 - ❖ Cradle to cradle
- Examine cumulative environmental impacts throughout product or service cycle
- Broad-based evaluation
 - ❖ Level of impact
 - ❖ Ability to influence
 - ❖ Stakeholder interest

The standard does not require performing a detailed life cycle assessment

Life Cycle Perspective

Scope 3 GHG Emissions Quantification

<i>Upstream or downstream</i>	<i>Scope 3 category</i>
Upstream scope 3 emissions	<ol style="list-style-type: none">1. Purchased goods and services2. Capital goods3. Fuel- and energy-related activities (not included in scope 1 or scope 2)4. Upstream transportation and distribution5. Waste generated in operations6. Business travel7. Employee commuting8. Upstream leased assets
Downstream scope 3 emissions	<ol style="list-style-type: none">9. Downstream transportation and distribution10. Processing of sold products11. Use of sold products12. End-of-life treatment of sold products13. Downstream leased assets14. Franchises15. Investments

Source: Corporate Value Chain (Scope 3) Accounting and Reporting Standard, Table [5.3]

Risk & Opportunity Evaluation

- Ensure that EH&S risk analyses are conducted in a consistent manner
- Eliminate or mitigate unacceptable risks identified by risk analyses
- Integrate risk control/mitigation plans into business planning and capital allocation process
- Prioritize findings, recommendations, and action items from reviews and analyses

Risk & Opportunity Evaluation



Managing EHS Business Risks

Risk Ranking - Likelihood

Likelihood Characteristic	Examples
Probability	% based on facility, company or industry statistics
Observed / anticipated (relative) frequency	<ul style="list-style-type: none">• Never / rarely• Has happened in industry• Once every 5 years• Once per year• Several times per year• Occurs on a frequent / recurring basis

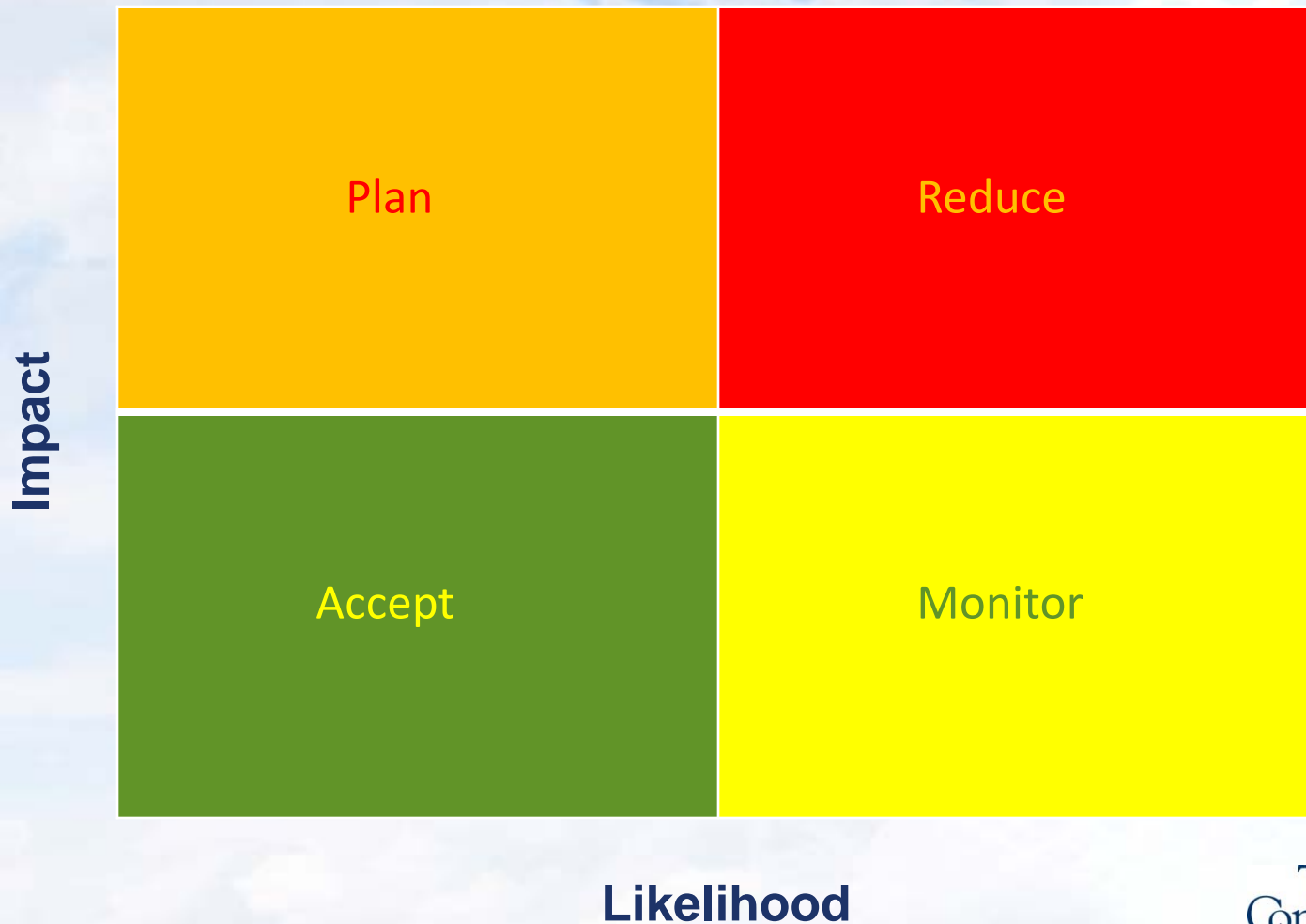
Managing EHS Business Risks

Risk Ranking - Impact

Impact Characteristic	Examples
Financial	<ul style="list-style-type: none">• Directly affects profit margin / net revenue• Actual / anticipated cost to enterprise
Severity / magnitude of fines & penalties	Nil, to a consent decree with \$mils of fines & penalties
Potential for environmental or operational impact	On-site, small, contained release, to major loss of containment that migrates off site or into ground or surface water resources
Potential for occupational or community incident	Minor incident, to major incident / injuries, to incident including fatality (ies)
Potential for adverse impact to reputation	Local critic, local / national news event, permanent reputation damage

Managing EHS Business Risks

Enterprise Risk Management



Stakeholder Needs & Expectations

- Employees
- Local community
- Regulators
- Investors
- Industry/trade associations
- Media
- Non-governmental organizations
- Customers
- Vendors and suppliers
- The larger public

Analyzing Stakeholder Goals, Objectives & Concerns

- What is the stakeholder's impact on our business?
- What is our business impact on the stakeholder?
- What issues are important to the stakeholder and why are they important?
- What type of interaction does the stakeholder desire and why?
- What type of interaction have we had in the past?
- What are the benefits and costs of the stakeholder relationship to our company?
- What opportunities and risks exist with respect to the stakeholder relationship?

Characterizing Stakeholders

Influence Criteria

- Authorize license to operate
- Impact access to resources and/or capital
- Impact company reputation
- Contribute to innovation ability

Dependency Criteria

- Direct financial connection
- Indirect financial connection
- Connection for essential services
- At risk from product and/or operations

Engagement Readiness

- Adversarial
- Unknown
- Engaged
- Cooperative
- Competitive

Sustainable Development Best Practices

- Extends beyond environmental management, addressing broad based social responsibility and corporate governance
- Encompasses stakeholder analysis and assessment of issues that are material to the company and its stakeholders
- Through corporate governance, addresses integration with other management systems and enterprise risk management
- A sustainable business demonstrates alignment with corporate business strategy and objectives

EMS Transition & Alignment

- > Conduct a *gap analysis* and establish a development plan for aligning your current EMS with ISO 14001:2015
- > Enhance the aspects/impacts evaluation process to ensure that a *life cycle perspective* is reflected
- > Establish a *risk & opportunity evaluation process* to prioritize how environmental issues are addressed
- > Increase *engagement with supply chain partners* to enhance environmental management actions
- > Ensure that *environmental protection and performance improvement metrics* are included in the organization's environmental objectives
- > Establish a *management of change process* to ensure that the organization maintains an acceptable level of risk even when changes occur to equipment, processes, personnel and products

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The background of the slide features a light blue sky with soft, white clouds. On the right side, there is a decorative pattern of light blue squares arranged in a grid, with the squares becoming more prominent towards the top right corner. Two horizontal red dotted lines are positioned above and below the word 'ANNEX'.

ANNEX

Changes Across Several Related ISO Standards

Item	Status	Target completion
ISO 14001 EMS	Final version has been published	September 2015
ISO 9001 QMS	Final version has been published	September 2015
ISO 45001 OHSMS	Entirely new standard Will mirror OHSAS 18001 with new structure and OSHA VPP elements	Early 2017
ISO 50001 EnMS	Has been out for ~ 4 years Technical committee work has begun on revisions	Anticipated in next few years
ISO 31000	Originally published in 2009, work group evaluating basis for revision	2017/2018

Annex SL High Level Structure

1. Scope

2. Normative references

3. Terms and definition

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 [] management system

4.4 [] management system

5. Leadership

5.1 Leadership and commitment

5.2 Policy

5.3 Organization roles, responsibilities and authorities

6. Planning

6.1 Actions to address risks and opportunities

6.2 [] objectives and planning to achieve them

7. Support

7.1 Resources

7.2 Competence

7.3 Awareness

7.4 Communication

7.5 Documented information

8. Operation

8.1 Operational planning and control

8.2 Emergency planning and response

9. Performance evaluation

9.1 Monitoring, measurement, analysis and evaluation

9.2 Internal audit

9.3 Management review

10. Improvement

10.2 Nonconformity and corrective action

10.3 Continual improvement

[] refers to discipline specific requirements

New vs. Old ISO 14001 Comparison

ISO 14001:2015	Key Elements	Relevant ISO 14001: 2004 Section
Context	4.1 - Organization and Context 4.2 – Needs/Expectations of Interested Parties 4.3 - Determining Scope of the EMS 4.4 - EMS Focus	
Leadership	5.1 - Leadership & Commitment 5.2 - Environmental Policy 5.3 - Organizational Roles, Responsibilities & Authorities	4.2 - Policy 4.4.1 - Resources, Roles, Responsibility & Authority
Planning	6.1 - Actions to Address Risks/Opportunities 6.1.2 - Environmental Aspects 6.1.3 - Compliance Obligations 6.1.4 - Planning Action 6.2 - Environmental Objectives & Planning Actions	4.3.1 - Environmental Aspects 4.3.2 - Legal & Other Requirements 4.3.3. - Objectives, Targets, and Programs
Support	<ul style="list-style-type: none"> • 7.1 - Resources • 7.2 - Competence • 7.3 - Awareness • 7.4 - Communication • 7.5 - Documented Information 	4.4.1 - Resources, Roles, Responsibility & Authority 4.4.2 – Competence, Training, & Awareness 4.4.3 - Communication 4.4.4 - Documentation 4.4.5 - Control of Documents

New vs. Old ISO 14001 Comparison

ISO 14001:2015	Key Elements	Relevant ISO 14001: 2004 Section
Operation	8.1 - Operational Planning & Control 8.2 - Emergency Preparedness & Response	4.4.6 - Operational Control 4.4.7 - Emergency Preparedness & Response
Performance Evaluation	9.1 - Monitoring, Measurement, Analysis & Evaluation 9.1.2 - Evaluation of Compliance 9.2 - Internal Audit 9.3 - Management Review	4.5.1 - Monitoring & Measurement 4.5.2 - Evaluation of Compliance 4.5.4 - Internal Audit 4.6 - Management Review
Improvement	10.2 - Nonconformity & Corrective Action 10.3 - Continual Improvement	4.5.3 - Nonconformity, Corrective Action & Preventive Action