

Introduction to ISO 14001



ISO 14001 is a powerful management tool that can be utilized by an organization.

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INTRO-001

Introduction to ISO 14001 (cont.)



The benefits of ISO 14001 are not just applicable to the organization which adopts it. Adjacent property owners and environmental groups have the potential to benefit also.

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INTRO-002

Introduction to ISO 14001 (cont.)



An organization normally employs a generalized strategic planning process to determine what products, services and/or activities it should produce to respond to the market.

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INTRO-003

Introduction to ISO 14001 (cont.)



The generalized strategic planning process normally follows the plan, do, check and act concepts.

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INTRO-004

Introduction to ISO 14001 (cont.)



ISO 14001 is built upon the same plan, do, check and act concepts. ISO 14001 also stresses the additional concept of continual improvement.

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INTRO-005

Introduction to ISO 14001 (cont.)



ISO 14001 can be integrated into an organization's strategic planning process.

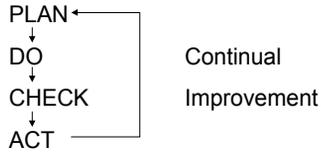
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INTRO-006

Introduction to ISO 14001 (cont.)



REMEMBER THE ISO 14001 FRAME



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INTRO-007

Overview of ISO 14001



General requirements (4.1)

This clause states that all sections of the standard must be complied with in order to be in conformance with the standard.

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OV-001

Overview of ISO 14001(cont.)



Environmental Policy (4.2)

An environmental policy must be constructed that contains the following elements:

1. Relevant to activities
2. Comply with legislation
3. Commits to the prevention of pollution

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OV-002

Overview of ISO 14001(cont.)



Environmental Policy (cont.)

4. Commits to continual improvement
5. Commits to setting environmental objectives and targets
6. Available to employees and public

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OV-003

Overview of ISO 14001(cont.)



PLAN

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OV-004

Overview of ISO 14001(cont.)



Environmental Aspects (4.3.1)

Identify environmental aspects for:

1. Normal operating conditions
2. Foreseeable deviations and emergencies

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OV-005

Overview of ISO 14001(cont.)



Legal and Other Requirements (4.3.2)

Identify the following:

1. Legislation
2. Regulations
3. Other restrictions

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OV-006

Overview of ISO 14001(cont.)



Objectives and Targets (4.3.3)

Environmental objectives and targets must be established which are consistent with the environmental policy.

DOCUMENTED

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OV-007

Overview of ISO 14001



Environmental Management Program (4.3.4)

1. Programs for the achievement of objectives and targets must be established.
2. Responsibilities designated.

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OV-008

Overview of ISO 14001



IMPLEMENT

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OV-009

Overview of ISO 14001(cont.)



Structure and Responsibility (4.4.1)

1. Adequate resources and skills provided.
2. Management representative assigned to operate and report.

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OV-010

Overview of ISO 14001(cont.)



Training, Awareness & Competence (4.4.2)

1. Employees must be aware of environmental objective(s).
2. Employees in area of responsibility must have appropriate training.
3. Employees in the area of responsibility must be aware of consequences

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OV-011

Overview of ISO 14001(cont.)



Communication (4.4.3)

1. System in place to receive and respond to communications with respect to environmental aspects.
2. Process for both internal and external communication.

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OV-012

Overview of ISO 14001(cont.)



Environmental Management System Documentation (4.4.4)

1. Documented description of the EMS that relates policy, objectives and targets, and responsibilities.
2. Must describe how to access associated documents.

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OV-013

Overview of ISO 14001(cont.)



Document Control (4.4.5)

There must be a document control system.

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OV-014

Overview of ISO 14001(cont.)



Operational Control (4.4.6)

1. Documented procedures must be prepared when they are needed to insure conformance.
2. Suppliers and contractors informed of procedures.

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OV-015

Overview of ISO 14001(cont.)



Emergency Preparedness and Response (4.4.7)

1. Foreseeable emergency situations must be identified, and procedures in place to respond.
2. Procedures tested periodically.

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OV-016

Overview of ISO 14001(cont.)



CHECK

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OV-017

Overview of ISO 14001(cont.)



Monitoring and Measuring (4.5.1)

1. Documented procedures for monitoring procedures.
2. Calibrated equipment.
3. Procedure for evaluating compliance with laws and regulations

DOCUMENTED

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OV-018

Overview of ISO 14001(cont.)



Nonconformance and Corrective and Preventative Action (4.5.2)

Process in place for investigating and correcting nonconformance(s).

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OV-019

Overview of ISO 14001(cont.)



Environmental Management Records (4.5.3)

Record retention and archiving must be specified.

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OV-020

Overview of ISO 14001(cont.)



Environmental Management System Audit (4.5.4)

1. The EMS must be audited to insure it is operating as designed.
2. Audit results reported to management.
3. Nonconformance(s) must be addressed.

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OV-021

Overview of ISO 14001(cont.)



ACT

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OV-022

Overview of ISO 14001(cont.)



Management Review (4.6)

1. Review must occur, with emphasis on policy and objectives, to determine if EMS is still effective for organization's activities.
2. Review the need to modify all or part of the EMS due to changed conditions.

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OV-023

Overview of ISO 14001 (cont.)



REMEMBER THE FOLLOWING:

1. All sections are a "shall".
2. "Documented" is used sparingly, more is probably appropriate.
3. Continually evolving process -- audits, corrections, and changing circumstances.

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OV-024

ISO 14001 Definitions



ISO 14001 DEFINITIONS

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DF-001

ISO 14001 Definitions (cont.)



The definition section of the ISO 14001 standard provides the foundation of the entire standard. They need to be understood is the standard is to be implemented.

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DF-002

ISO 14001 Definitions (cont.)



"3.1 -- Continual Improvement

Process of enhancing the environmental management system to achieve improvements in overall environmental performance in line with the organization's environmental policy.
NOTE -- The process need not take place in all areas of activity simultaneously."

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DF-003

ISO 14001 Definitions (cont.)



Continual improvement in this usage applies only to the environmental management system. It does not directly apply to environmental performance. It is assumed that if the environmental management system is improved that environmental performance will also improve.

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DF-004

ISO 14001 Definitions (cont.)



"3.2 -- Environment

Surroundings in which an organization operates, including air, water, land, natural resources, flora, fauna, humans, and their interrelation.
NOTE -- Surroundings in this context extend from within an organization to the global system."

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DF-005

ISO 14001 Definitions (cont..)



Includes environment and natural resources, but does not require the inclusion of safety and industrial hygiene.

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DF-006

ISO 14001 Definitions (cont..)



"3.3 -- Environmental Aspect

Element of an organization's activities, products or services that can interact with the environment.

NOTE -- A significant environmental aspect is an environmental aspect that has or can have a significant environmental impact."

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DF-007

ISO 14001 Definitions (cont..)



"Interact" -- positive, neutral or negative

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DF-008

ISO 14001 Definitions (cont..)



"3.4 -- Environmental Impact

Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services."

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DF-009

ISO 14001 Definitions (cont..)



The combination of environmental aspects with the environmental impacts is the first step in establishing the significance of the environmental aspect.

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DF-010

ISO 14001 Definitions (cont..)



"3.5 -- Environmental Management System

The part of the overall management system that includes organizational structure, planning activities, responsibilities, practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy."

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DF-011

ISO 14001 Definitions (cont.)



“3.6 -- Environmental Management System Audit
A systematic and documented verification process of objectively obtaining and evaluating evidence to determine whether an organization's environmental management system conforms to the environmental management system audit criteria set by the organization, and for communication of the results of this process to management.”

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DF-012

ISO 14001 Definitions (cont.)



Checking to see if the EMS is being implemented properly at every appropriate level of the organization.

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DF-013

ISO 14001 Definitions (cont.)



"3.7 -- Environmental Objective
Overall environmental goal, arising from the environmental policy, that an organization sets itself to achieve, and which is quantifiable where practicable."

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DF-014

ISO 14001 Definitions (cont.)



Specific goals that must be set to implement the environmental policy.

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DF-015

ISO 14001 Definitions (cont.)



“3.8 -- Environmental Performance
Measurable results of the environmental management system, related to an organization's control of its environmental aspects, based upon its environmental policy, objective and targets.”

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DF-016

ISO 14001 Definitions (cont.)



“3.9 -- Environmental Policy
Statement by the organization of its intentions and principles in relation to its overall environmental performance which provides a framework for action and for the setting of its environmental objectives and targets.”

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DF-017

ISO 14001 Definitions (cont..)



The entire environmental management system is designed to meet the commitments of the environmental policy. It provides the framework for setting the environmental objectives and targets.

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DF-018

ISO 14001 Definitions (cont..)



"3.10 -- Environmental Target
Detailed performance requirement, quantified where practicable, applicable to the organization or parts thereof, that arises from the environmental objectives and that needs to be set and met in order to achieve those objectives."

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DF-019

ISO 14001 Definitions (cont..)



Detailed performance requirement that arise from environmental objective.
Must be measurable and quantifiable.

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DF-020

ISO 14001 Definitions (cont..)



"3.11 -- Interested Party
Individual or group concerned with or affected by the environmental performance of an organization."

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DF-021

ISO 14001 Definitions (cont..)



"3.12 -- Organization
Company, corporation, firm, enterprise, authority or institution, or part or combination thereof, whether incorporated or not, public or private, that has its own functions and administration.
NOTE -- For organizations with more than one operating unit, a single operating unit may be defined as an organization."

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DF-022

ISO 14001 Definitions (cont..)



"3.13 -- Prevention of Pollution
Use of processes, practices, materials or products that avoid, reduce or control pollution, which may include recycling, treatment, process changes, control mechanisms, efficient use of resources and material substitution.
NOTE -- The potential benefits of prevention of pollution include the reduction of adverse environmental impacts, improved efficiency and reduced costs."

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DF-023

ISO 14001 Definitions (cont..)



The organization must commit to review and utilize where appropriate the following prevention of pollution techniques -- recycling, treatment, process change, control mechanisms, efficient use of resources and material substitution.

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DF-024

ISO 14001 Definitions (cont..)



Non-ISO 14001 Definitions

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DF-025

ISO 14001 Definitions (cont..)



Conformance

The condition or fact of being in harmony or agreement; correspondence; congruity; similarity.

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DF-026

ISO 14001 Definitions (cont..)



Compliance

Complying, or giving in to a request, demand, wish, etc. Also--in compliance with, in accordance with.

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DF-027

ISO 14001 Definitions (cont..)



Conformance is utilized in ISO 14001. Compliance is associated with command and control activities such as environmental laws.

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DF-028

General Requirements



General Requirements (4.1)

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GR-001

General Requirements (cont.)



In order to be considered for compliance with the requirements of ISO 14001 every element of Section 4, Environmental Management System Requirements, must be addressed.

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GR-002

General Requirements (cont.)



ISO 14001 does contain Annex A (Informative) -- Guidance on the Use of the Specification. This is only guidance there are not any third party audit issues contained within Annex A.

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GR-003

General Requirements (cont.)



Section 4.1 clearly states that all issues laid out in Section 4 must be addressed.

THIS IS THE PURPOSE OF 4.1

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GR-004

Environmental Policy



ISO 14001
Environmental Policy (4.2)

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EP-001

Environmental Policy (cont.)



The Environmental Policy statement is the keystone of the environmental management system.

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EP-002

Environmental Policy (cont.)



Must contain and communicate:

- mission and core values with respect to the environment, and
- commitments to control and improve environmental performance with respect to significant environmental aspects of the organization's products, activities and/or services.

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EP-003

Environmental Policy (cont.)



Content requirements of the Environmental Policy statement:

1. Appropriate to organization's environmental impacts,
2. Provides framework for setting Environmental Objectives and Targets,
3. Commitment to continual improvement,

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EP-004

Environmental Policy (cont.)



Content requirements of the Environmental Policy statement: (cont.)

4. Commitment to prevention of pollution,
5. Commitment to comply with environmental laws and regulations, and other requirements to which the organization subscribes,
6. Document and implement the Environmental Policy, and

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EP-005

Environmental Policy (cont.)



Content requirements of the Environmental Policy statement: (cont.)

7. Commitment to communicate the Environmental Policy to the Public.

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EP-006

Environmental Policy (cont.)



Appropriate...environmental impacts:

1. Every organization has unique interactions with and impacts on the environment.
2. Must demonstrate that it is fully aware of all relevant environmental issues and their potential impact and importance.

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EP-007

Environmental Policy (cont.)



Organization will need to review at a minimum the following:

- its operation,
- pollutant emissions and releases,
- past environmental performance,
- location,
- land use activities,
- sensitive environmental areas,

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EP-008

Environmental Policy (cont.)



Organization will need to review at a minimum the following: (cont.)

- environmental impacts from other organizations nearby,
- environmental legislation and regulation,
- community stakeholder views,
- etc.

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EP-009

Environmental Policy (cont.)



Framework...Objectives & Targets:

- Each Environmental Objective must be traceable back to the Environmental Policy statement.
- Every action, requirement, procedure, etc., must trace back to the Environmental Policy statement.

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EP-010

Environmental Policy (cont.)



Continual Improvement:

This issue focuses on the improvement of the environmental management system. The system must be reviewed at a set frequency for changed aspects and impacts.

Yearly

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EP-011

Environmental Policy (cont.)



Commitment to Prevention of Pollution:

Once Environmental Objectives have been established the only requirement is that prevention of pollution be evaluated as one of the alternatives.

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EP-012

Environmental Policy (cont.)



Commitment to comply...environmental laws & regulations:

1. This statement is straightforward.
2. No clause in ISO 14001 requires unconditional compliance.
3. What is required?
 - a. Identify applicable laws and regulations,

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EP-013

Environmental Policy (cont.)



Commitment to comply...environmental laws & regulations: (cont.)

- b. decide whether in compliance or noncompliance,
- c. for those areas where noncompliance exists, develop an action plan to correct noncompliance, and
- d. establish a system to maintain compliance.

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EP-014

Environmental Policy (cont.)



Commitment to comply...environmental laws & regulations: (cont.)

4. Does an organization need to be in full compliance in order to conform with ISO 14001? NO
5. A continued pattern of noncompliance may demonstrate a lack of a “system to maintain compliance”.
6. Include voluntary guidelines.

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EP-015

Environmental Policy (cont.)



Document and implement:
Executive level manager must sign the Environmental Policy statement.
Document control must be utilized.

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EP-016

Environmental Policy (cont.)



Communicate... Employees:
All employees within the organization must understand and recognize the commitments. Additionally, each employee should know how their job function interacts with the Environmental Policy statement.

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EP-017

Environmental Policy (cont.)



Communicate... Public:
The Environmental Policy statement must be made available to the public.

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EP-018

Planning Requirements



Planning Requirements (4.3)

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PR-001

Planning Requirements (cont.)



The planning phase of ISO 14001 contains four distinct steps:

1. Environmental Aspects determination (4.3.1),
2. Legal and Other Requirements documentation (4.3.2),

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PR-002

Planning Requirements (cont.)



The planning phase of ISO 14001 contains four distinct steps:

3. Objectives and Targets development (4.3.3), and
4. Environmental Management Program development (4.3.4)

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PR-003

Planning Requirements (cont.)



The four step process may cause the Environmental Policy (4.2) statement to be an iterative process. Don't view this possibility as an impediment. It is just a opportunity to strengthen the Environmental Policy statement.

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PR-004

Environmental Aspects



ENVIRONMENTAL ASPECTS (4.3.1)

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EA-001

Environmental Aspects (cont.)



The organization must determine its environmental aspects and then arrive at a list of the most important or significant aspects.

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EA-002

Environmental Aspects (cont.)



There are three distinct requirements:

1. The organization must identify the environmental aspects of its products, services and/or activities.

How does it interact with environment?

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EA-003

Environmental Aspects (cont.)



There are three distinct requirements:
(cont.)

2. The organization shall identify the specific aspects that can be controlled, and over which it can be expected to have influence.

Control versus Influence

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EA-004

Environmental Aspects (cont.)



There are three distinct requirements:
(cont.)

3. The organization must arrive at a list of significant aspects based upon the individual impact of each aspect.

Which are the most important?

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EA-005

Environmental Aspects (cont.)



Identify Environmental Aspects

Potential list of environmental aspects:

1. releases of material to the air, water and/or soil;
2. disposal of wastes;
3. energy and natural resource consumption;

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EA-006

Environmental Aspects (cont.)



Identify Environmental Aspects (cont.)

Potential list of environmental aspects:

4. noise levels;
5. transportation and/or storage of materials ;
6. manufacturing processes;
7. etc.

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EA-007

Environmental Aspects (cont.)



The purpose of this step is not to determine the importance of each aspect. The purpose of the step is to develop a complete listing of how the organization interacts with the environment.

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EA-008

Environmental Aspects (cont.)



The procedure developed must include non routine conditions.

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EA-009

Environmental Aspects (cont.)



The concept of continual improvement must be included. The overall list of environmental aspects can be influenced by future changes in laws, changes in operations, etc.

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EA-010

Environmental Aspects (cont.)



Controlled...Influence:

The organization needs to identify which of its environmental aspects that it can control versus those over which it only has influence

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EA-011

Environmental Aspects (cont.)



Controlled...Influence: (cont.)

The simple approach here is to only include those over which it has control. However, this might not be enough in all cases. The use of life cycle analysis might be necessary in the design of products.

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EA-012

Environmental Aspects (cont.)



Controlled...Influence: (cont.)

This is a **“grey”** area in the standard.
The procedure that is utilized will need to address this **“grey”** area.

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EA-013

Environmental Aspects (cont.)



Significant Environmental Aspects

The process of arriving at a list of significant environmental aspects must be a reasonable and understandable procedure.

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EA-014

Environmental Aspects (cont.)



Significant Environmental Aspects (cont.)

The following criteria could be used:

1. perceived risk (human health vs. ecosystem);
2. impact analysis (internal, regional global);
3. probability of occurrence;

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EA-015

Environmental Aspects (cont.)



Significant Environmental Aspects (cont.)

The following criteria could be used: (cont.)

4. direct or indirect control;
5. regulated or non-regulated;
6. resource utilization;
7. community interest;
8. etc.

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EA-016

Environmental Aspects (cont.)



Significant Environmental Aspects (cont.)

Utilize the preceding information to develop a risk based matrix that evaluates all the aspects for ranking. The information that is utilized in the matrix should be quantitative in nature, not qualitative.

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EA-017

Environmental Aspects (cont.)



Review Points:

1. Organization must demonstrate that it understands how it interacts with the environment.
2. Explain its position on "control vs. Influence".

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EA-018

Environmental Aspects (cont.)



Review Points: (cont.)

3. Explain how it arrived at significant environmental aspects based upon impacts.
4. Develop a procedure that incorporates the three required steps.

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EA-019

Environmental Aspects (cont.)



The procedure describing the establishment of the significant environmental aspects will be audited very closely under the conformance review of ISO 14001.

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EA-020

Legal and Other Requirements



LEGAL AND OTHER REQUIREMENTS (4.3.2)

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LR-001

Legal and Other Requirements (cont.)



The organization must know and understand which environmental laws and regulations govern its operation.

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LR-002

Legal and Other Requirements (cont.)



Three requirements:

1. Must understand which environmental laws and regulations govern its operations.
2. Must be able to explain the requirements of the appropriate laws and regulations.

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LR-003

Legal and Other Requirements (cont.)



Three requirements: (cont.)

3. Demonstrate that it keeps up to date on the environmental laws, regulations and requirements.

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LR-004

Legal and Other Requirements (cont.)



Additional Point:

If the organization voluntarily subscribes to any environmental guidelines and/or requirements the preceding three points must be followed.

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LR-005

Legal and Other Requirements (cont.)



This section does not contain the word “document” in the language of the standard. However, the only practical manner to demonstrate conformance is to assemble in one place a complete list and copies of the referenced material.

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LR-006

Environmental Objectives and Targets



ENVIRONMENTAL OBJECTIVES AND TARGETS (4.3.3)

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EOT-001

Environmental Objectives and Targets (cont.)



Environmental Objectives are essentially the “goals” that are established to meet the “vision” statement of the organization.

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EOT-002

Environmental Objectives and Targets (cont.)



The “vision” statement of the organization is its Environmental Policy statement.

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EOT-003

Environmental Objectives and Targets (cont.)



Once these “goals” have been established detailed workplans and schedules need to be established to arrive at the “goals”. The detailed workplans and schedules are known as the Environmental Targets.

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EOT-004

Environmental Objectives and Targets (cont.)



ISO 14001 requires that Environmental Objectives and Targets be quantitative rather than qualitative. In addition every level of the organization must be examined for inclusion in the Environmental Targets.

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EOT-005

Environmental Objectives and Targets (cont.)



ISO 14001 also requires that the Environmental Objectives and Targets be documented.

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EOT-006

Environmental Objectives and Targets (cont.)



There are four distinct content requirements for the development of the Environmental Objectives and Targets:

1. Organization must consider the material developed in the Legal and Other Requirements (4.3.2) section.

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EOT-007

Environmental Objectives and Targets (cont.)



four...content requirements... (cont.)

2. The organization must utilize the list of significant environmental aspects previously developed.
3. The organization must evaluate the prevention of pollution commitment include in the Environmental Policy statement.

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EOT-008

Environmental Objectives and Targets (cont.)



four...content requirements... (cont.)

4. The organization must ensure that the views of interested parties are considered in the process of developing the Environmental Objectives.

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EOT-009

Environmental Objectives and Targets (cont.)



Legal and Other Requirements

A reasonable approach here might be to develop an objective for all the applicable environmental laws and regulations and their corresponding requirements. Once compliance with a certain requirement is obtained the associated target could be set to a maintenance level of activity.

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EOT-010

Environmental Objectives and Targets (cont.)



Significant Environmental Aspects

The organization must evaluate every significant environmental aspect for inclusion as an Environmental Objective. If a significant environmental aspect is not carried forward into an objective the organization must provide a plausible and rational explanation.

Technology or Financial Limitations

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EOT-011

Environmental Objectives and Targets (cont.)



Prevention of Pollution

An organization must evaluate the application of prevention of pollution techniques in the development of Environmental Targets. If the prevention of pollution approaches evaluated are not cost effective they do not need to be employed in a specific case.

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EOT-012

Environmental Objectives and Targets (cont.)



Interested Parties

The organization will need to develop and maintain a process for accepting, evaluating and addressing outside comments.

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EOT-013

Environmental Management Programs



ENVIRONMENTAL MANAGEMENT PROGRAMS (4.3.4)

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EMP-001

Environmental Management Programs (cont.)



This section of ISO 14001 requires four distinct steps:

1. The organization must demonstrate that it has established a management program for achieving its objectives and targets.
2. Assigned responsibility at all appropriate levels.

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EMP-002

Environmental Management Programs (cont.)



This section of ISO 14001 requires four distinct steps: (cont.)

3. The organization must specify time frames and mechanisms needed.
4. The organization must employ "continual improvement" when appropriate.

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EMP-003

Environmental Management Programs (cont.)



This section of the standard completes the "PLANNING PROCESS" of ISO 14001. The planning process contained the following elements:

1. Environmental Aspects,
2. Legal and Other Requirements,
3. Objectives and Targets, and
4. Management Programs

Now it is time to move to Implementation!

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EMP-004

Implementation and Operation



IMPLEMENTATION AND OPERATION (4.4)

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IO-001

Implementation and Operation (cont.)



Section 4.4 of the standard contains the overall requirements for the organizational and operational roles and structures of the ISO 14001 environmental management system.

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IO-002

Implementation and Operation (cont.)



The major topics within the Implementation and Operation heading are:

- A. Structure and Responsibility (4.4.1)
Who does what?
- B. Training, Awareness and Competence (4.4.2)
Who needs to be trained?

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IO-003

Implementation and Operation (cont.)



The major topics within the Implementation and Operation heading are: (cont.)

- C. Communication (4.4.3)
What communication system needs to be established?
- D. Environmental Management System Documentation (4.4.4)
What level of documentation is needed?

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IO-004

Implementation and Operation (cont.)



The major topics within the Implementation and Operation heading are: (cont.)

- E. Document Control (4.4.5)
How do you keep current and accurate documents?
- F. Operational Control (4.4.6)
How do you insure that the operations are controlled properly?

Implementation and Operation (cont.)



The major topics within the Implementation and Operation heading are: (cont.)

- G. Emergency Preparedness and Response (4.4.7)
How do you plan and respond to emergency situations?

Structure and Responsibility



STRUCTURE AND RESPONSIBILITY (4.4.1)

Structure and Responsibility (cont.)



The basic issue that needs to be addressed in the Structure and Responsibility section of the standard is

“WHO DOES WHAT?”

Structure and Responsibility (cont.)



Three specific tasks must be addressed:

- A. Responsibilities of each individual and unit within the organization must be defined and documented with respect to the EMS.

Structure and Responsibility (cont.)



Three specific tasks must be addressed: (cont.)

- B. Adequate resources must be provided to implement and maintain the EMS.
- C. Management representative must be appointed to ensure conformance and continual improvement.

Structure and Responsibility (cont.)



Everyone's role with respect to the EMS must be documented and communicated -- In other words every member of the organization must recognize and understand their role.

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SR-005

Structure and Responsibility (cont.)



Top management must commit the resources necessary to support the EMS:

- manpower,
- special skills,
- technology, and
- financial

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SR-006

Structure and Responsibility (cont.)



The appointed management representative must have the responsibility and necessary authority to perform the following:

- establish ISO 14001 requirements,
- review implementation
- determine operational conformance with ISO 14001, and
- report to top management on conformance and continual improvement .

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SR-007

Training, Awareness and Competence



TRAINING, AWARENESS AND COMPETENCE (4.4.2)

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TA-001

Training, Awareness and Competence (cont.)



The basic issue that needs to be addressed in the Training, Awareness and Competency section of the standard is

WHO NEEDS TO BE TRAINED?

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TA-002

Training, Awareness and Competence (cont.)



There are two types of training required:

- A. General Awareness, and
- B. Technical and Skills

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TA-003

Training, Awareness and Competence (cont.)



Awareness Training

The entire organization should have general awareness training.

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TA-004

Training, Awareness and Competence (cont.)



The general awareness training should consist of the following:

1. Importance of the EMS,
2. Various roles within the organization for achieving and maintaining the EMS, and
3. Consequences of deviating from the EMS.

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TA-005

Training, Awareness and Competence (cont.)



Technical and Skills training has two subdivisions:

1. Provided for those individuals and units which are responsible for activities that may create significant environmental impacts.
2. Emergency Preparedness and Response.

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TA-006

Training, Awareness and Competence (cont.)



The level of training will depend upon the complexity of the activity and the level of education and experience of the personnel involved.

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TA-007

Training, Awareness and Competence (cont.)



The organization must develop competency standards for the training.

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TA-008

Communication



COMMUNICATION (4.4.3)

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C-001

Communication (cont.)



The basic issue that needs to be addressed in the Communication section of the standard is

WHAT COMMUNICATION SYSTEM NEEDS TO BE ESTABLISHED?

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C-002

Communication (cont.)



Three issues must be addressed:

1. Organization must establish and maintain an internal communication system for the EMS.
2. Organization must establish a system for responding to external communication with respect to the EMS.
3. Organization should decide whether to communicate significant environmental aspects to external parties.

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C-003

Communication (cont.)



The internal communication requirement already exists within the standard.

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C-004

Communication (cont.)



The wording used in the standard with respect to the remaining requirements becomes "grey".

i.e. "relevant" & "record its decision"

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C-005

Communication (cont.)



It is left to the organization to determine what is "relevant", and therefore what it is required to respond to from external communication.

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C-006

Communication (cont.)



The standard raises the issue of communicating to external parties information on the significant environmental aspects of the organization. The standard then goes on to state that the organization must "record its decision" whether to communicate this information.

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C-007

Communication (cont.)



The Communication Section of the standard should be read very carefully, and the organization's interactions with external parties evaluated carefully.

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C-008

Environmental Management System Documentation



ENVIRONMENTAL MANAGEMENT SYSTEM DOCUMENTATION (4.4.4)

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EMSD-001

Environmental Management System Documentation (cont.)



The basic issue that needs to be addressed in the Environmental Management System Documentation of the standard is

WHAT LEVEL OF DOCUMENTATION IS NEEDED?

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EMSD-002

Environmental Management System Documentation (cont.)



Three issues must be addressed:

1. Organization must describe the foundation elements of the EMS in either paper or electronic format.
2. Description must demonstrate the interaction between elements.
3. Description must reference the related documentation.

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EMSD-003

Environmental Management System Documentation (cont.)



When reviewing the standard the requirements for documentation are based upon the presence of the following:

1. Word -- "document"; and,
2. Phrases --
 - a. "establish and maintain procedures",and
 - b. "establish and maintain programme(s)"

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EMSD-004

Environmental Management System Documentation (cont.)



When reviewing the language of the standard either the word "document" or one of the phrases is discovered in every section.

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EMSD-005

Environmental Management System Documentation (cont.)



The standard is silent on the form of the documentation. The development of an environmental management system manual is one possible approach.

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EMSD-006

Environmental Management System Documentation (cont.)



One possible format for the EMS manual:

- A. Planning (4.2 and 4.3.1 through 4.3.4)
- B. Program Overview (4.4.1 through 4.4.7 and 4.5.1 through 4.5.4)
- C. Management Review (4.6)

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EMSD-007

Environmental Management System Documentation (cont.)



Planning section of the EMS manual would include the development of the environmental policy, significant environmental aspect, objectives and targets and the workplans and timelines for the objectives and targets.

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EMSD-008

Environmental Management System Documentation (cont.)



Environmental Management Program Overview section of the manual would include the structure and responsibility charts and the procedures and evidence required by sections 4.4 and 4.5 of the standard.

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EMSD-009

Environmental Management System Documentation (cont.)



The Management Review section of the EMS manual would contain the records of the review by top management.

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EMSD-010

Environmental Management System Documentation (cont.)



The potential benefits to this approach are that it ties together the vision and goals of the organization in the first section of the manual. The second section of the manual contains the necessary procedures and evidence to support the vision and goals. The final section of the manual contains the record of review by top management with respect to the vision and goals.

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EMSD-011

Environmental Management System Documentation (cont.)



The EMS manual should be kept as simple and streamlined as possible. Do not create a collection of documents more complicated than necessary to meet the requirements of this section of the standard

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EMSD-012

Document Control



DOCUMENT CONTROL (4.4.5)

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DC-001

Document Control (cont.)



The basic issue that needs to be addressed in the Document Control section of the standard is

HOW DO YOU MAINTAIN CURRENT AND ACCURATE DOCUMENTS?

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DC-002

Document Control (cont.)



Six issues must be addressed:

1. Scope of the overall document control system needs to be defined.
2. Must be a document approval or authorization process.
3. Maintain a document revision tracking process.
4. Insure that correct revisions are available at workstations.

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DC-003

Document Control (cont.)



Six issues must be addressed: (cont.)

5. Out of date documents promptly removed from workstations.
6. Out of date documents that need to be archived for historical purposes are maintained at a separate location.

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DC-004

Document Control (cont.)



The primary purpose of the document control system is to insure that only the current and approved documents are employed in the planning and implementation of the EMS.

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DC-005

Operational Control



OPERATIONAL CONTROL (4.4.6)

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OC-001

Operational Control (cont.)



The basic issue that needs to be addressed in the Operation Control section of the standard is

HOW DO YOU INSURE THAT THE OPERATIONS ARE CONTROLLED PROPERLY?

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OC-002

Operational Control (cont.)



Three issues must be addressed:

1. Organization must identify the operations and activities that are directly associated with the Significant Environmental Aspects.
2. Organization must develop procedures and operational criteria, including maintenance, that address these specific operations and activities.

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OC-003

Operational Control (cont.)



Three issues must be addressed: (cont..)

3. Organization must communicate the procedures and operational criteria to suppliers of products and services that might interact with the established Significant Environmental Aspects.

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OC-004

Operational Control (cont.)



The first two points have been previously addressed and evaluated during the development of Environmental Policy statement, Significant Environmental Aspects and the Environmental Objectives and Targets. This section of the standard reinforces the need for documented procedures for those programs directly related to Significant Environmental Aspects.

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OC-005

Operational Control (cont.)



The third point references the “control and influence” concept. The organization will need to communicate relevant portions of the EMS to suppliers and contractors if their activities and services have the potential to interact with the organization’s Significant Environmental Aspects.

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OC-006

Emergency Preparedness and Response



EMERGENCY PREPAREDNESS AND RESPONSE (4.4.7)

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ER-001

Emergency Preparedness and Response (cont.)



The basic issue that needs to be addressed in the Emergency Preparedness and Response section is

HOW DO PLAN AND RESPOND TO EMERGENCY SITUATIONS?

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ER-002

Emergency Preparedness and Response (cont.)



Three specific issues must be addressed:

1. Organization must identify the possibilities for accidents and emergency situations.
2. Organization must prepare emergency preparedness and response procedures.
3. Organization should evaluate and revise as appropriate the procedures.

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ER-003

Emergency Preparedness and Response (cont.)



NOTE: The Emergency Preparedness and Response section of the standard applies to the entire organization, not just the Significant Environmental Aspects.

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ER-004

Emergency Preparedness and Response (cont.)



Potential process steps:

- inventorying hazardous substances
- identifying potential accident scenarios
- modeling potential distribution patterns
- evaluating potential impacts

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ER-005

Emergency Preparedness and Response (cont.)



Once the preceding steps have been completed the organization should develop procedures to potentially eliminate the incidents.

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ER-006

Emergency Preparedness and Response (cont.)



Organization should also develop procedures to respond to the potential accidents.

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ER-007

Emergency Preparedness and Response (cont.)



The emergency response procedures should be tested periodically.

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ER-008

Checking and Corrective Action



CHECKING AND CORRECTIVE ACTION (4.5)

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CC-001

Checking and Corrective Action (cont.)



Section 4.5 of the standard contains the overall requirements for the checking (data collection) and corrective action (assessment) requirements of the ISO 14001 environmental management system.

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CC-002

Checking and Corrective Action (cont.)



The major topics within the Checking and Corrective Action heading are:

1. Monitoring and Measurement (4.5.1)
How does the organization evaluate the key characteristics of the EMS with respect to conformance with both the Environmental Objectives and Targets and environmental laws and regulations?

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CC-003

Checking and Corrective Action (cont.)



The major topics within the Checking and Corrective Action heading are: (cont.)

2. Nonconformance and Corrective and Preventative Action (4.5.2)
How does the organization handle nonconformance with respect to the EMS?

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CC-004

Checking and Corrective Action (cont.)



The major topics within the Checking and Corrective Action heading are:(cont.)

3. Records (4.5.3)

How does the organization handle records associated with the EMS?

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CC-005

Checking and Corrective Action (cont.)



The major topics within the Checking and Corrective Action heading are: (cont.)

4. Environmental Management System Audit (4.5.4)

How does the organization conduct environmental audits of the EMS?

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CC-006

Monitoring and Measuring



MONITORING AND MEASUREMENT (4.5.1)

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MM-001

Monitoring and Measuring (cont.)



Section 4.5.1 of the standard contains the requirements for monitoring and measurement of those activities related to the significant environmental aspects of ISO 14001.

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MM-002

Monitoring and Measuring (cont.)



The basic issue that needs to be addressed in the monitoring and measurement section is

HOW DOES AN ORGANIZATION EVALUATE THE KEY CHARACTERISTICS OF THE EMS WITH RESPECT TO CONFORMANCE WITH THE ENVIRONMENTAL OBJECTIVES AND TARGETS AND COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS?

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MM-003

Monitoring and Measuring (cont.)



Three specific issues must be addressed:

1. Organization must establish a documented procedure to monitor and measure on a set frequency the activities that are related to the significant environmental aspects.
2. Organization must ensure that the devices used for monitor and measure are calibrated accurately.

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MM-004

Monitoring and Measuring (cont.)



Three specific issues must be addressed:
(cont.)

3. Organization must establish a documented procedure for evaluating on a set frequency compliance with environmental laws and regulations.

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MM-005

Monitoring and Measuring (cont.)



Remember the significant environmental aspects lead to the development of the objectives and targets. The monitoring programs must be directly related to each established target.

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MM-006

Monitoring and Measuring (cont.)



Calibration of monitoring and measuring devices is required to insure that the organization has control of accuracy and precision issues.

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MM-007

Monitoring and Measuring (cont.)



ISO 14001 requires that the organization evaluate, understand and recognize its obligations with respect to applicable environmental laws and regulations. A documented procedure with a set frequency must be developed to review compliance with laws and regulations.

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MM-008

Monitoring and Measuring (cont.)



ISO 14001 requires that the organization maintain these records.

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MM-009

Nonconformance and Corrective and Preventative Action



**NONCONFORMANCE AND
CORRECTIVE AND
PREVENTATIVE ACTION
(4.5.2)**

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NC-001

Nonconformance and Corrective and Preventative Action (cont.)



Section 4.5.2 of the standard contains the requirements for addressing, correcting and preventing nonconformance within the environmental management system.

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NC-002

Nonconformance and Corrective and Preventative Action (cont.)



The basic issue that needs to be addressed in the nonconformance and corrective and preventative section is

HOW DOES THE ORGANIZATION HANDLE NONCONFORMANCE WITH RESPECT TO THE EMS?

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NC-003

Nonconformance and Corrective and Preventative Action (cont.)



Three specific issues must be addressed:

1. Organization must develop a procedure for investigating nonconformance from the established EMS (include responsibility and authority).
2. Organization must take the necessary actions to mitigate impacts.
3. Organization will need to modify existing procedures as preventative action.

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NC-004

Nonconformance and Corrective and Preventative Action (cont.)



4.5.2 is aimed at the following process:

1. document the nonconformance;
 2. notify and mitigate;
 3. investigate the cause;
 4. prevent reoccurrence;
 5. modify existing procedure (preventative);
- and,
6. communicate changed procedure.

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NC-005

Nonconformance and Corrective and Preventative Action (cont.)



Where does the evidence of a nonconformance originate?

1. internal reporting system of the EMS, and
2. external sources such as suppliers, end users and stakeholders.

There must be recognition for the potential of external communication with respect to nonconformance.

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NC-006

Records



RECORDS (4.5.3)

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R-001

Records (cont.)



Section 4.5.3 of the standard contains the requirements for records within the environmental management system.

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R-002

Records (cont.)



The basic issue that needs to be addressed in the records section is
HOW DOES THE ORGANIZATION HANDLE RECORDS ASSOCIATED WITH THE EMS?

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R-003

Records (cont.)



Three specific issues must be addressed:

1. Organization must establish and maintain a records retention system for the necessary supporting documentation relating to the EMS.
2. Organization must establish retention timeframes for the records.
3. Records archived in a traceable and identifiable fashion.

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R-004

Records (cont.)



Universe of records for retention:

1. Legal and other requirements
2. Permits
3. Environmental aspects and impacts
4. Environmental training
5. Inspection and calibration information
6. Monitoring data

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R-005

Records (cont.)



Universe of records for retention: (cont.)

7. Nonconformance reports and follow-up information
8. Environmental audits
9. Management reviews
10. Emergency preparedness response information
11. Etc.

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R-006

Records (cont.)



Retention Time Frames:

1. Permits--established by regulatory groups
2. Suggestion--maintain records related to previous nonconformance longer than other time frames.

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R-007

Records (cont.)



Record system should be indexed and archived in such a manner that any searches can be accurately and quickly completed.

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R-008

Records (cont.)



NOTE:

The records that support the EMS are extremely important to the organization with respect to audits and management reviews.

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R-009

Environmental Management System Audits



ENVIRONMENTAL MANAGEMENT SYSTEM AUDITS (4.5.4)

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AU-001

Environmental Management System Audits (cont.)



Section 4.5.4 of the standard contains the requirements for audits of the environmental management system.

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AU-002

Environmental Management System Audits (cont.)



The basic issue that needs to be addressed in the EMS audit section is

HOW DOES THE ORGANIZATION CONDUCT ENVIRONMENTAL AUDITS OF THE EMS?

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AU-003

Environmental Management System Audits (cont.)



Four specific issues must be addressed:

1. Organization must develop a program and procedures that define the audit plan, including frequency.
2. Procedures must define methodology and qualifications of auditors.
3. Requirement that audit reports be submitted to top management.

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AU-004

Environmental Management System Audits (cont.)



Four specific issues must be addressed: (cont.)

4. Audit reports must contain recommendations for correcting any nonconformance discovered.

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AU-005

Environmental Management System Audits (cont.)



Frequency of audits:

1. Mature systems -- once a year,
2. Implementation phase -- more frequent, and
3. Nonconformance areas -- more frequent.

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AU-006

Environmental Management System Audits (cont.)



Methodology requirements:

1. Determine conformance with requirements of ISO 14001, and
2. That the EMS has been managed as described in the Environmental Policy statement, the Environmental Objectives and Targets, and related work descriptions and procedures.

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AU-007

Management Review



MANAGEMENT REVIEW (4.6)

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MR-001

Management Review (cont.)



Section 4.6 of the standard contains the requirements for top management review of the EMS.

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MR-002

Management Review (cont.)



The basic issue that needs to be addressed in the management review section is

WHAT MUST HAPPEN DURING THE MANAGEMENT REVIEW?

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MR-003

Management Review (cont.)



Three specific issues must be addressed:

1. Top management must conduct reviews of the EMS on a set frequency.
2. Top management must evaluate the existing information on the EMS to determine if it is adequate.
3. Top management must evaluate the need for modifying the Environmental Policy and the Environmental Objectives.

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MR-004

Management Review (cont.)



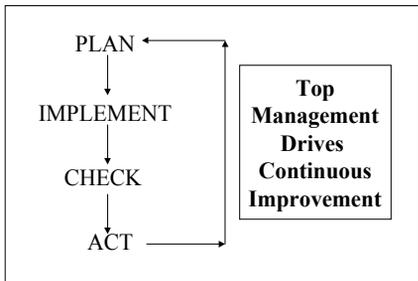
What material should be provided to top management:

1. compliance information,
2. internal audit reports,
3. progress reports w/r to environmental targets,
4. information w/r to environmental aspects, and
5. internal and external communications w/r to EMS.

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MR-005

Management Review (cont.)



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MR-006