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Environmental management systems — Specification with guidance for use

Systèmes de management environnemental — Spécification et lignes directrices pour son utilisation

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ISO 14001:1996(E)

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 14001 was prepared by Technical Committee ISO/TC 207, *Environmental management*, Subcommittee SC 1, *Environmental management systems*.

Annexes A, B and C of this International Standard are for information only.

Introduction

Organizations of all kinds are increasingly concerned to achieve and demonstrate sound environmental performance by controlling the impact of their activities, products or services on the environment, taking into account their environmental policy and objectives. They do so in the context of increasingly stringent legislation, the development of economic policies and other measures to foster environmental protection, and a general growth of concern from interested parties about environmental matters including sustainable development.

Many organizations have undertaken environmental "reviews" or "audits" to assess their environmental performance. On their own, however, these "reviews" and "audits" may not be sufficient to provide an organization with the assurance that its performance not only meets, but will continue to meet, its legal and policy requirements. To be effective, they need to be conducted within a structured management system and integrated with overall management activity.

International Standards covering environmental management are intended to provide organizations with the elements of an effective environmental management system which can be integrated with other management requirements, to assist organizations to achieve environmental and economic goals. These Standards, like other International Standards, are not intended to be used to create non-tariff trade barriers or to increase or change an organization's legal obligations.

This International Standard specifies the requirements of such an environmental management system. It has been written to be applicable to all types and sizes of organizations and to accommodate diverse geographical, cultural and social conditions. The basis of the approach is shown in figure 1. The success of the system depends on commitment from all levels and functions, especially from top management. A system of this kind enables an organization to establish, and assess the effectiveness of, procedures to set an environmental policy and objectives, achieve conformance with them, and demonstrate such conformance to others. The overall aim of this International Standard is to support environmental protection and prevention of pollution in balance with socio-economic needs. It should be noted that many of the requirements may be addressed concurrently or revisited at any time.

There is an important distinction between this specification which describes the requirements for certification/registration and/or self-declaration of an organization's environmental management system and a non-certifiable guideline intended to provide generic assistance to an organization for implementing or improving an environmental management system. Environmental management encompasses a full range of issues including those with strategic and competitive implications. Demonstration of successful implementation of this International Standard can be used by an organ-

ization to assure interested parties that an appropriate environmental management system is in place.

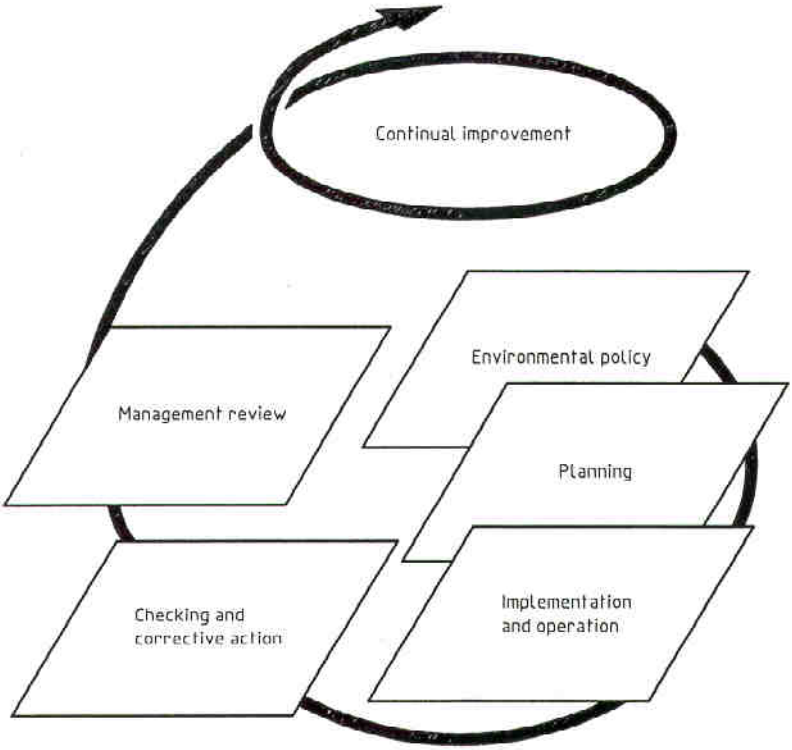

Figure 1 — Environmental management system model for this International Standard

Guidance on supporting environmental management techniques will be contained in other International Standards.

This International Standard contains only those requirements that may be objectively audited for certification/registration purposes and/or self-declaration purposes. Those organizations requiring more general guidance on a broad range of environmental management system issues should refer to ISO 14004:1996, *Environmental management systems — General guidelines on principles, systems and supporting techniques.*

It should be noted that this International Standard does not establish absolute requirements for environmental performance beyond commitment, in the policy, to compliance with applicable legislation and regulations and to continual improvement. Thus, two organizations carrying out similar activities but having different environmental performance may both comply with its requirements.

The adoption and implementation of a range of environmental management techniques in a systematic manner can contribute to optimal outcomes for all interested parties. However, adoption of this International Standard will not in itself guarantee optimal environmental outcomes. In order to achieve environmental objectives, the environmental management system should encourage organizations to consider implementation of the best available technology, where appropriate and where economically viable. In addition,

the cost effectiveness of such technology should be fully taken into account.

This International Standard is not intended to address, and does not include requirements for, aspects of occupational health and safety management; however, it does not seek to discourage an organization from developing integration of such management system elements. Nevertheless, the certification/registration process will only be applicable to aspects of the environmental management system.

This International Standard shares common management system principles with the ISO 9000 series of quality system Standards. Organizations may elect to use an existing management system consistent with the ISO 9000 series as a basis for its environmental management system. It should be understood, however, that the application of various elements of the management system may differ due to different purposes and different interested parties. While quality management systems deal with customer needs, environmental management systems address the needs of a broad range of interested parties and the evolving needs of society for environmental protection.

The environmental management system requirements specified in this International Standard do not need to be established independently of existing management system elements. In some cases, it will be possible to comply with the requirements by adapting existing management system elements.

Environmental management systems — Specification with guidance for use

1 Scope

This International Standard specifies requirements for an environmental management system, to enable an organization to formulate a policy and objectives taking into account legislative requirements and information about significant environmental impacts. It applies to those environmental aspects which the organization can control and over which it can be expected to have an influence. It does not itself state specific environmental performance criteria.

This International Standard is applicable to any organization that wishes to

a) implement, maintain and improve an environmental management system;

b) assure itself of its conformance with its stated environmental policy;

c) demonstrate such conformance to others;

d) seek certification/registration of its environmental management system by an external organization;

e) make a self-determination and self-declaration of conformance with this International Standard.

All the requirements in this International Standard are intended to be incorporated into any environmental management system. The extent of the application will depend on such factors as the environmental policy of the organization, the nature of its activities and the conditions in which it operates. This International Standard also provides, in annex A, informative guidance on the use of the specification.

The scope of any application of this International Standard must be clearly identified.

NOTE — For ease of use, the subclause of the specification and annex A have related numbers; thus, for example, 4.3.3. and A.3.3 both deal with environmental objectives and targets, and 4.5.4 and A.5.4 both deal with environmental management system audit.

2 Normative references

There are no normative references at present.

3 Definitions

For the purposes of this International Standard, the following definitions apply.

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.

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.

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.

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

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

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

3.7
environmental objective
overall environmental goal, arising from the environmental policy, that an organization sets itself to achieve, and which is quantified where practicable

3.8
environmental performance
measurable results of the environmental management system, related to an organization's control of its environmental aspects, based on its environmental policy, objectives and targets

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

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

3.11
interested party
individual or group concerned with or affected by the environmental performance of an organization

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.

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.

4 Environmental management system requirements

4.1 General requirements

The organization shall establish and maintain an environmental management system, the requirements of which are described in the whole of clause 4.

4.2 Environmental policy

Top management shall define the organization's environmental policy and ensure that it

a) is appropriate to the nature, scale and environmental impacts of its activities, products or services;

b) includes a commitment to continual improvement and prevention of pollution;

c) includes a commitment to comply with relevant environmental legislation and regulations, and with other requirements to which the organization subscribes;

d) provides the framework for setting and reviewing environmental objectives and targets;

e) is documented, implemented and maintained and communicated to all employees;

f) is available to the public.

4.3 Planning

4.3.1 Environmental aspects

The organization shall establish and maintain (a) procedure(s) to identify the environmental aspects of its activities, products or services that it can control and over which it can be expected to have an influence, in order to determine those which have or can have significant impacts on the environment. The organization shall ensure that the aspects related to these significant impacts are considered in setting its environmental objectives.

The organization shall keep this information up-to-date.

4.3.2 Legal and other requirements

The organization shall establish and maintain a procedure to identify and have access to legal and other requirements to which the organization subscribes, that are applicable to the environmental aspects of its activities, products or services.

4.3.3 Objectives and targets

The organization shall establish and maintain documented environmental objectives and targets, at each relevant function and level within the organization.

When establishing and reviewing its objectives, an organization shall consider the legal and other requirements, its significant environmental aspects, its technological options and its financial, operational and business requirements, and the views of interested parties.

The objectives and targets shall be consistent with the environmental policy, including the commitment to prevention of pollution.

4.3.4 Environmental management programme(s)

The organization shall establish and maintain (a) programme(s) for achieving its objectives and targets. It shall include

a) designation of responsibility for achieving objectives and targets at each relevant function and level of the organization;

b) the means and time-frame by which they are to be achieved.

If a project relates to new developments and new or modified activities, products or services, programme(s) shall be amended where relevant to ensure that environmental management applies to such projects.

4.4 Implementation and operation

4.4.1 Structure and responsibility

Roles, responsibility and authorities shall be defined, documented and communicated in order to facilitate effective environmental management.

Management shall provide resources essential to the implementation and control of the environmental management system. Resources include human resources and specialized skills, technology and financial resources.

The organization's top management shall appoint (a) specific management representative(s) who, irrespective of other responsibilities, shall have defined roles, responsibilities and authority for

a) ensuring that environmental management system requirements are established, implemented and maintained in accordance with this International Standard;

b) reporting on the performance of the environmental management system to top management for review and as a basis for improvement of the environmental management system.

4.4.2 Training, awareness and competence

The organization shall identify training needs. It shall require that all personnel whose work may create a significant impact upon the environment, have received appropriate training.

It shall establish and maintain procedures to make its employees or members at each relevant function and level aware of

a) the importance of conformance with the environmental policy and procedures and with the requirements of the environmental management system;

b) the significant environmental impacts, actual or potential, of their work activities and the environmental benefits of improved personal performance;

c) their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirements of the environmental management system, including emergency preparedness and response requirements;

d) the potential consequences of departure from specified operating procedures.

Personnel performing the tasks which can cause significant environmental impacts shall be competent on

the basis of appropriate education, training and/or experience.

4.4.3 Communication

With regard to its environmental aspects and environmental management system, the organization shall establish and maintain procedures for

a) internal communication between the various levels and functions of the organization;

b) receiving, documenting and responding to relevant communication from external interested parties.

The organization shall consider processes for external communication on its significant environmental aspects and record its decision.

4.4.4 Environmental management system documentation

The organization shall establish and maintain information, in paper or electronic form, to

a) describe the core elements of the management system and their interaction;

b) provide direction to related documentation.

4.4.5 Document control

The organization shall establish and maintain procedures for controlling all documents required by this International Standard to ensure that

a) they can be located;

b) they are periodically reviewed, revised as necessary and approved for adequacy by authorized personnel;

c) the current versions of relevant documents are available at all locations where operations essential to the effective functioning of the environmental management system are performed;

d) obsolete documents are promptly removed from all points of issue and points of use, or otherwise assured against unintended use;

e) any obsolete documents retained for legal and/or knowledge preservation purposes are suitably identified.

Documentation shall be legible, dated (with dates of revision) and readily identifiable, maintained in an orderly manner and retained for a specified period. Procedures and responsibilities shall be established and maintained concerning the creation and modification of the various types of document.

4.4.6 Operational control

The organization shall identify those operations and activities that are associated with the identified significant environmental aspects in line with its policy, objectives and targets. The organization shall plan these activities, including maintenance, in order to ensure that they are carried out under specified conditions by

a) establishing and maintaining documented procedures to cover situations where their absence could lead to deviations from the environmental policy and the objectives and targets;

b) stipulating operating criteria in the procedures;

c) establishing and maintaining procedures related to the identifiable significant environmental aspects of goods and services used by the organization and communicating relevant procedures and requirements to suppliers and contractors.

4.4.7 Emergency preparedness and response

The organization shall establish and maintain procedures to identify potential for and respond to accidents and emergency situations, and for preventing and mitigating the environmental impacts that may be associated with them.

The organization shall review and revise, where necessary, its emergency preparedness and response procedures, in particular, after the occurrence of accidents or emergency situations.

The organization shall also periodically test such procedures where practicable.

4.5 Checking and corrective action

4.5.1 Monitoring and measurement

The organization shall establish and maintain documented procedures to monitor and measure, on a regular basis, the key characteristics of its operations and activities that can have a significant impact on the environment. This shall include the recording of information to track performance, relevant operational controls and conformance with the organization's environmental objectives and targets.

Monitoring equipment shall be calibrated and maintained and records of this process shall be retained according to the organization's procedures.

The organization shall establish and maintain a documented procedure for periodically evaluating compliance with relevant environmental legislation and regulations.

4.5.2 Nonconformance and corrective and preventive action

The organization shall establish and maintain procedures for defining responsibility and authority for handling and investigating nonconformance, taking action to mitigate any impacts caused and for initiating and completing corrective and preventive action.

Any corrective or preventive action taken to eliminate the causes of actual and potential nonconformances shall be appropriate to the magnitude of problems and commensurate with the environmental impact encountered.

The organization shall implement and record any changes in the documented procedures resulting from corrective and preventive action.

4.5.3 Records

The organization shall establish and maintain procedures for the identification, maintenance and disposition of environmental records. These records shall include training records and the results of audits and reviews.

Environmental records shall be legible, identifiable and traceable to the activity, product or service involved. Environmental records shall be stored and maintained in such a way that they are readily retrievable and protected against damage, deterioration or loss. Their retention times shall be established and recorded.

Records shall be maintained, as appropriate to the system and to the organization, to demonstrate conformance to the requirements of this International Standard.

4.5.4 Environmental management system audit

The organization shall establish and maintain (a) programme(s) and procedures for periodic environmental management system audits to be carried out, in order to

a) determine whether or not the environmental management system
   1) conforms to planned arrangements for environmental management including the requirements of this International Standard; and
   2) has been properly implemented and maintained; and
b) provide information on the results of audits to management.

The organization's audit programme, including any schedule, shall be based on the environmental importance of the activity concerned and the results of previous audits. In order to be comprehensive, the audit procedures shall cover the audit scope, frequency and methodologies, as well as the responsibilities and requirements for conducting audits and reporting results.

4.6 Management review

The organization's top management shall, at intervals that it determines, review the environmental management system, to ensure its continuing suitability, adequacy and effectiveness. The management review process shall ensure that the necessary information is collected to allow management to carry out this evaluation. This review shall be documented.

The management review shall address the possible need for changes to policy, objectives and other elements of the environmental management system, in the light of environmental management system audit results, changing circumstances and the commitment to continual improvement.

Annex A
(informative)

Guidance on the use of the specification

This annex gives additional information on the requirements and is intended to avoid misinterpretation of the specification. This annex only addresses the environmental management system requirements contained in clause 4.

A.1 General requirements

It is intended that the implementation of an environmental management system described by the specification will result in improved environmental performance. The specification is based on the concept that the organization will periodically review and evaluate its environmental management system in order to identify opportunities for improvement and their implementation. Improvements in its environmental management system are intended to result in additional improvements in environmental performance.

The environmental management system provides a structured process for the achievement of continual improvement, the rate and extent of which will be determined by the organization in the light of economic and other circumstances. Although some improvement in environmental performance can be expected due to the adoption of a systematic approach, it should be understood that the environmental management system is a tool which enables the organization to achieve and systematically control the level of environmental performance that it sets itself. The establishment and operation of an environmental management system will not, in itself, necessarily result in an immediate reduction of adverse environmental impact.

An organization has the freedom and flexibility to define its boundaries and may choose to implement this International Standard with respect to the entire organization, or to specific operating units or activities of the organization. If this International Standard is implemented for a specific operating unit or activity, policies and procedures developed by other parts of the organization can be used to meet the requirements of this International Standard, provided that they are applicable to the specific operating unit or activity that will be subject to it. The level of detail and complexity of the environmental management system, the extent of documentation and the resources devoted to it will be dependent in the size of an organization and the nature of its activities. This may be the case in particular for small and medium-sized enterprises.

Integration of environmental matters with the overall management system can contribute to the effective implementation of the environmental management system, as well as to efficiency and to clarity of roles.

This International Standard contains management system requirements, based on the dynamic cyclical process of "plan, implement, check and review".

The system should enable an organization to

a) establish an environmental policy appropriate to itself;

b) identify the environmental aspects arising from the organization's past, existing or planned activities, products or services, to determine the environmental impacts of significance;

c) identify the relevant legislative and regulatory requirements;

d) identify priorities and set appropriate environmental objectives and targets;

e) establish a structure and (a) programme(s) to implement the policy and achieve objectives and targets;

f) facilitate planning, control, monitoring, corrective action, auditing and review activities to ensure both that the policy is complied with and that the environmental management system remains appropriate;

g) be capable of adapting to changing circumstances.

A.2 Environmental policy

The environmental policy is the driver for implementing and improving the organization's environmental management system so that it can maintain and potentially improve its environmental performance. The policy should therefore reflect the commitment of top management to compliance with applicable laws and continual improvement. The policy forms the basis upon which the organization sets its objectives and targets. The policy should be sufficiently clear to be capable of being understood by internal and external interested parties and should be periodically reviewed and revised to reflect changing conditions and information. Its area of application should be clearly identifiable.

The organization's top management should define and document its environmental policy within the context of the environmental policy of any broader corporate body of which it is a part and with the endorsement of that body, if there is one.

NOTE — Top management may consist of an individual or group of individuals with executive responsibility for the organization.

A.3 Planning

A.3.1 Environmental aspects

Subclause 4.3.1 is intended to provide a process for an organization to identify significant environmental aspects that should be addressed as a priority by the organization's environmental management system. This process should take into account the cost and time of undertaking the analysis and the availability of reliable data. Information already developed for regulatory or other purposes may be used in this process. Organizations may also take into account the degree of practical control they may have over the environmental aspects being considered. Organizations should determine what their environmental aspects are, taking into account the inputs and outputs associated with their current and relevant past activities, products and/or services.

An organization with no existing environmental management system should, initially, establish its current position with regard to the environment by means of a review. The aim should be to consider all environmental aspects of the organization as a basis for establishing the environmental management system.

Those organizations with operating environmental management systems do not have to undertake such a review.

The review should cover four key areas:

a) legislative and regulatory requirements;

b) an identification of significant environmental aspects;

c) an examination of all existing environmental management practices and procedures;

d) an evaluation of feedback from the investigation of previous incidents.

In all cases, consideration should be given to normal and abnormal operations within the organization, and to potential emergency conditions.

A suitable approach to the review may include checklists, interviews, direct inspection and measurement, results of previous audits or other reviews depending on the nature of the activities.

The process to identify the significant environmental aspects associated with the activities at operating units should, where relevant, consider,

a) emissions to air;

b) releases to water;

c) waste management;

d) contamination of land;

e) use of raw materials and natural resources;

f) other local environmental and community issues.

This process should consider normal operating conditions, shut-down and start-up conditions, as well as the realistic potential significant impacts associated with reasonably foreseeable or emergency situations.

The process is intended to identify significant environmental aspects associated with activities, products or services, and is not intended to require a detailed life cycle assessment. Organizations do not have to evaluate each product, component or raw material input. They may select categories of activities, products or services to identify those aspects most likely to have a significant impact.

The control and influence over the environmental aspects of products vary significantly, depending on the market situation of the organization. A contractor or supplier to the organization may have comparatively little control, while the organization responsible for product design can alter the aspects significantly by changing, for example, a single input material. Whilst recognizing that organizations may have limited control over the use and disposal of their products, they should consider, where practical, proper handling and disposal mechanisms. This provision is not intended to change or increase an organisation's legal obligations.

A.3.2 Legal and other requirements

Examples of other requirements to which the organization may subscribe are

a) industry codes of practice;

b) agreements with public authorities;

c) non-regulatory guidelines.

A.3.3 Objectives and targets

The objectives should be specific and targets should be measurable wherever practicable, and where appropriate take preventative measures into account.

When considering their technological options, an organization may consider the use of the best available technology where economically viable, cost-effective and judged appropriate.

The reference to the financial requirements of the organization is not intended to imply that organizations are obliged to use environmental cost-accounting methodologies.

A.3.4 Environmental management programme(s)

The creation and use of one or more programmes is a key element to the successful implementation of an environmental management system. The programme should describe how the organization's objectives and targets will be achieved, including time-scales and personnel responsible for implementing the organization's environmental policy. This programme may be subdivided to address specific elements of the organization's operations. The programme should include an environmental review for new activities.

The programme may include, where appropriate and practical, consideration of planning, design, production, marketing and disposal stages. This may be undertaken for both current and new activities, products or services. For products this may address design, materials, production processes, use and ultimate disposal. For installations or significant modifications of processes this may address planning, design, construction, commissioning, operation and, at the appropriate time determined by the organization, decommissioning.

A.4 Implementation and operation

A.4.1 Structure and responsibility

The successful implementation of an environmental management system calls for the commitment of all employees of the organization. Environmental responsibilities therefore should not be seen as confined to the environmental function, but may also include other areas of an organization, such as operational management or staff functions other than environmental.

This commitment should begin at the highest levels of management. Accordingly, top management should establish the organization's environmental policy and ensure that the environmental management system is implemented. As part of this commitment, the top management should designate (a) specific management representative(s) with defined responsibility and authority for implementing the environmental management system. In large or complex organizations there may be more than one designated representative. In small or medium sized enterprises, these responsibilities may be undertaken by one individual. Top management should also ensure that appropriate resources are provided to ensure that the environmental management system is implemented and maintained. It is also important that the key environmental management system responsibilities are well defined and communicated to the relevant personnel.

A.4.2 Training, awareness and competence

The organization should establish and maintain procedures for identifying training needs. The organization should also require that contractors working on its behalf are able to demonstrate that their employees have the requisite training.

Management should determine the level of experience, competence and training necessary to ensure the capability of personnel, especially those carrying out specialized environmental management functions.

A.4.3 Communication

Organizations should implement a procedure for receiving, documenting and responding to relevant information and requests from interested parties. This procedure may include a dialogue with interested parties and consideration of their relevant concerns. In some circumstances, responses to interested parties' concerns may include relevant information about the environmental impacts associated with the organization's operations. These procedures should also address necessary communications with public authorities regarding emergency planning and other relevant issues.

A.4.4 Environmental management system documentation

The level of detail of the documentation should be sufficient to describe the core elements of the environmental management system and their interaction and provide direction on where to obtain more detailed information on the operation of specific parts of the environmental management system. This documentation may be integrated with documentation of other systems implemented by the organization. It does not have to be in the form of a single manual.

Related documentation may include

a) process information;

b) organizational charts;

c) internal standards and operational procedures;

d) site emergency plans.

A.4.5 Document control

The intent of 4.4.5 is to ensure that organizations create and maintain documents in a manner sufficient to implement the environmental management system. However, the primary focus of organizations should be on the effective implementation of the environmental management system and on environmental performance and not on a complex documentation control system.

A.4.6 Operational control

Text may be included here in a future revision.

A.4.7 Emergency preparedness and response

Text may be included here in a future revision.

A.5 Checking and corrective action

A.5.1 Monitoring and measurement

Text may be included here in a future revision.

A.5.2 Nonconformance and corrective and preventive action

In establishing and maintaining procedures for investigating and correcting nonconformance, the organization should include these basic elements:

a) identifying the cause of the nonconformance;

b) identifying and implementing the necessary corrective action;

c) implementing or modifying controls necessary to avoid repetition of the nonconformance;

d) recording any changes in written procedures resulting from the corrective action.

Depending on the situation, this may be accomplished rapidly and with a minimum of formal planning or it may be a more complex and long-term activity. The associated documentation should be appropriate to the level of corrective action.

A.5.3 Records

Procedures for identification, maintenance and disposition of records should focus on those records needed for the implementation and operation of the environmental management system and for recording the extent to which planned objectives and targets have been met.

Environmental records may include

a) information on applicable environmental laws or other requirements;

b) complaint records;

c) training records;

d) process information;

e) product information;

f) inspection, maintenance and calibration records;

g) pertinent contractor and supplier information;

h) incident reports;

i) information on emergency preparedness and response;

j) information on significant environmental aspects;

k) audit results;

l) management reviews.

Proper account should be taken of confidential business information.

A.5.4 Environmental management system audit

The audit programme and procedures should cover

a) the activities and areas to be considered in audits;

b) the frequency of audits;

c) the responsibilities associated with managing and conducting audits;

d) the communication of audit results;

e) auditor competence;

f) how audits will be conducted.

Audits may be performed by personnel from within the organization and/or by external persons selected by the organization. In either case, the persons conducting the audit should be in a position to do so impartially and objectively.

A.6 Management review

In order to maintain continual improvement, suitability and effectiveness of the environmental management system, and thereby its performance, the organization's management should review and evaluate the environmental management system at defined intervals. The scope of the review should be comprehen-

sive, though not all elements of an environmental management system need to be reviewed at once and the review process may take place over a period of time.

The review of the policy, objectives and procedures should be carried out by the level of management that defined them.

Reviews should include

a) results from audits;

b) the extent to which objectives and targets have been met;

c) the continuing suitability of the environmental management system in relation to changing conditions and information;

d) concerns amongst relevant interested parties.

Observations, conclusions and recommendations should be documented for necessary action.

Annex B
(informative)

Links between ISO 14001 and ISO 9001

Tables B.1 and B.2 identify links and broad technical correspondences between ISO 14001 and ISO 9001 and *vice versa*.

The objective of the comparison is to demonstrate the combinability of both systems to those organizations already operating one of these International Standards and which may wish to operate both.

A direct link between subclauses of the two International Standards has only been established if the two subclauses are largely congruent in requirements. Beyond that, many detailed cross-connections of minor relevance exist which could not be shown here.

Table B.1 — Correspondence between ISO 14001 and ISO 9001

ISO 14001:1996		ISO 9001:1994	
General requirements	4.1	4.2.1 1st sentence	General
Environmental policy	4.2	4.1.1	Quality policy
Planning			
Environmental aspects	4.3.1	—	
Legal and other requirements	4.3.2	— 1)	
Objectives and targets	4.3.3	— 2)	
Environmental management programme(s)	4.3.4	—	
	—	4.2.3	Quality planning
Implementation and operation			
Structure and responsibility	4.4.1	4.1.2	Organization
Training, awareness and competence	4.4.2	4.18	Training
Communication	4.4.3	—	
Environmental management system documentation	4.4.4	4.2.1 without 1st sentence	General
Document control	4.4.5	4.5	Document and data control
Operational control	4.4.6	4.2.2	Quality system procedures
	4.4.6	4.3 3)	Contract review
	4.4.6	4.4	Design control
	4.4.6	4.6	Purchasing
	4.4.6	4.7	Control of customer-supplied product
	4.4.6	4.9	Process control
	4.4.6	4.15	Handling, storage, packaging, preservation and delivery
	4.4.6	4.19	Servicing
	—	4.8	Product identification and traceability
Emergency preparedness and response	4.4.7	—	
Checking and corrective action			
Monitoring and measurement	4.5.1 1st and 3rd paragraphs	4.10	Inspection and testing
	—	4.12	Inspection and test status
	—	4.20	Statistical techniques
Monitoring and measurement	4.5.1 2nd paragraph	4.11	Control of inspection, measuring and test equipment
Nonconformance and corrective and preventive action	4.5.2 1st part of 1st sentence	4.13	Control of nonconforming product
Nonconformance and corrective and preventive action	4.5.2 without 1st part of 1st sentence	4.14	Corrective and preventive action
Records	4.5.3	4.16	Control of quality records
Environmental management system audit	4.5.4	4.17	Internal quality audits
Management review	4.6	4.1.3	Management review

1) Legal requirements addressed in ISO 9001, 4.4.4.
2) Objectives addressed in ISO 9001, 4.1.1.
3) Communication with the quality stakeholders (customers).

Table B.2 — Correspondence between ISO 9001 and ISO 14001

ISO 9001:1994		ISO 14001:1996	
Management responsibility			
Quality policy	4.1.1	4.2	Environmental policy
	—	4.3.1	Environmental aspects
	— 1)	4.3.2	Legal and other requirements
	— 2)	4.3.3	Objectives and targets
	—	4.3.4	Environmental management programme(s)
Organization	4.1.2	4.4.1	Structure and responsibility
Management review	4.1.3	4.6	Management review
Quality system			
General	4.2.1 1st sentence	4.1	General requirements
	4.2.1 without 1st sentence	4.4.4	Environmental management system documentation
Quality system procedures	4.2.2	4.4.6	Operational control
Quality planning	4.2.3	—	
Contract review	4.3 3)	4.4.6	Operational control
Design control	4.4	4.4.6	Operational control
Document and data control	4.5	4.4.5	Document control
Purchasing	4.6	4.4.6	Operational control
Control of customer-supplied product	4.7	4.4.6	Operational control
Product identification and traceability	4.8	—	
Process control	4.9	4.4.6	Operational control
Inspection and testing	4.10	4.5.1 1st and 3rd paragraphs	Monitoring and measurement
Control of inspection, measuring and test equipment	4.11	4.5.1 2nd paragraph	Monitoring and measurement
Inspection and test status	4.12	—	
Control of nonconforming product	4.13	4.5.2 1st part of 1st sentence	Nonconformance and corrective and preventive action
Corrective and preventive action	4.14	4.5.2 without 1st part of 1st sentence	Nonconformance and corrective and preventive action
	—	4.4.7	Emergency preparedness and response
Handling, storage, packaging, preservation and delivery	4.15	4.4.6	Operational control
Control of quality records	4.16	4.5.3	Records
Internal quality audits	4.17	4.5.4	Environmental management system audit
Training	4.18	4.4.2	Training, awareness and competence
Servicing	4.19	4.4.6	Operational control
Statistical techniques	4.20	—	
	—	4.4.3	Communication

1) Legal requirements addressed in ISO 9001, 4.4.4.
2) Objectives addressed in ISO 9001, 4.1.1.
3) Communication with the quality stakeholders (customers).

Annex C
(informative)

Bibliography

[1] ISO 9000-1:1994, *Quality management and quality assurance standards — Part 1: Guidelines for selection and use.*

[2] ISO 9000-2:1993, *Quality management and quality assurance standards — Part 2: Generic guidelines for the application of ISO 9001, ISO 9002 and ISO 9003.*

[3] ISO 9000-3:1991, *Quality management and quality assurance standards — Part 3: Guidelines for the application of ISO 9001 to the development, supply and maintenance of software.*

[4] ISO 9000-4:1993, *Quality management and quality assurance standards — Part 4: Guide to dependability programme management.*

[5] ISO 9001:1994, *Quality systems — Model for quality assurance in design, development, production, installation and servicing.*

[6] ISO 14004:1996, *Environmental management systems — General guidelines on principles, systems and supporting techniques.*

[7] ISO 14010:1996, *Guidelines for environmental auditing — General principles.*

[8] ISO 14011:1996, *Guidelines for environmental auditing — Audit procedures — Auditing of environmental management systems.*

[9] ISO 14012:1996, *Guidelines for environmental auditing — Qualification criteria for environmental auditors.*