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| **Environmental management systems — Requirements with guidance for use****ISO 14001:2015(E)**Third edition2015-09-15**Introduction**.............................**1 Scope**...............................................**2 Normative references**..................................**3 Terms and definitions**.................................3.1 Terms related to organization and leadership..3.2 Terms related to planning............3.3 Terms related to support and operation.....................3.4 Terms related to performance evaluation and improvement**4 Context of the organization**......4.1 Understanding the organization and its context......4.2 Understanding the needs and expectations of interested parties....4.3 Determining the scope of the environmental management system....4.4 Environmental management system............**5 Leadership**...........5.1 Leadership and commitment........5.2 Environmental policy.......................5.3 Organizational roles, responsibilities and authorities.**6 Planning**.6.1 Actions to address risks and opportunities...6.1.1 General................6.1.2 Environmental aspects........6.1.3 Compliance obligations.........6.1.4 Planning action................6.2 Environmental objectives and planning to achieve them....6.2.1 Environmental objectives........6.2.2 Planning actions to achieve environmental objectives...**7 Support**............7.1 Resources.............7.2 Competence.................7.3 Awareness...................7.4 Communication............7.4.1 General......................7.4.2 Internal communication..........7.4.3 External communication...........7.5 Documented information................7.5.1 General.................7.5.2 Creating and updating..............7.5.3 Control of documented information......**8 Operation**.....8.1 Operational planning and control...........8.2 Emergency preparedness and response.....**9 Performance evaluation**.............9.1 Monitoring, measurement, analysis and evaluation........9.1.1 General.............9.1.2 Evaluation of compliance..........9.2 Internal audit......................9.2.1 General....................9.2.2 Internal audit programme..........9.3 Management review................**10 Improvement**................10.1 General...................10.2 Nonconformity and corrective action10.3 Continual improvement..........**Annex A** (informative) **Guidance on the use of this International Standard**.**Annex B** (informative) **Correspondence between ISO 14001:2015 and ISO 14001:2004**..（略）**Bibliography**..................**Introduction****0.1 Background**Achieving a balance between the environment, society and the economy is considered essential to meet the needs of the present without compromising the ability of future generations to meet their needs. Sustainable development as a goal is achieved by balancing the three pillars of sustainability.Societal expectations for sustainable development, transparency and accountability have evolved with increasingly stringent legislation, growing pressures on the environment from pollution, inefficient use of resources, improper waste management, climate change, degradation of ecosystems and loss of biodiversity.This has led organizations to adopt a systematic approach to environmental management by implementing environmental management systems with the aim of contributing to the environmental pillar of sustainability.**0.2 Aim of an environmental management system**The purpose of this International Standard is to provide organizations with a framework to protect the environment and respond to changing environmental conditions in balance with socio-economic needs. It specifies requirements that enable an organization to achieve the intended outcomes it sets for its environmental management system.A systematic approach to environmental management can provide top management with information to build success over the long term and create options for contributing to sustainable development by:— protecting the environment by preventing or mitigating adverse environmental impacts;— mitigating the potential adverse effect of environmental conditions on the organization;— assisting the organization in the fulfilment of compliance obligations;— enhancing environmental performance;— controlling or influencing the way the organization’s products and services are designed, manufactured, distributed, consumed and disposed by using a life cycle perspective that can prevent environmental impacts from being unintentionally shifted elsewhere within the life cycle;— achieving financial and operational benefits that can result from implementing environmentally sound alternatives that strengthen the organization’s market position;— communicating environmental information to relevant interested parties.This International Standard, like other International Standards, is not intended to increase or change an organization’s legal requirements.**0.3 Success factors**The success of an environmental management system depends on commitment from all levels and functions of the organization, led by top management. Organizations can leverage opportunities to prevent or mitigate adverse environmental impacts and enhance beneficial environmental impacts, particularly those with strategic and competitive implications. Top management can effectively address its risks and opportunities by integrating environmental management into the organization’s business processes, strategic direction and decision making, aligning them with other business priorities, and incorporating environmental governance into its overall management system. Demonstration of successful implementation of this International Standard can be used to assure interested parties that an effective environmental management system is in place.Adoption of this International Standard, however, will not in itself guarantee optimal environmental outcomes. Application of this International Standard can differ from one organization to another due to the context of the organization. Two organizations can carry out similar activities but can have different compliance obligations, commitments in their environmental policy, environmental technologies and environmental performance goals, yet both can conform to the requirements of this International Standard.The level of detail and complexity of the environmental management system will vary depending on the context of the organization, the scope of its environmental management system, its compliance obligations, and the nature of its activities, products and services, including its environmental aspects and associated environmental impacts.**0.4 Plan-Do-Check-Act model**The basis for the approach underlying an environmental management system is founded on the concept of Plan-Do-Check-Act (PDCA). The PDCA model provides an iterative process used by organizations to achieve continual improvement. It can be applied to an environmental management system and to each of its individual elements. It can be briefly described as follows.— Plan: establish environmental objectives and processes necessary to deliver results in accordance with the organization’s environmental policy.— Do: implement the processes as planned.— Check: monitor and measure processes against the environmental policy, including its commitments, environmental objectives and operating criteria, and report the results.— Act: take actions to continually improve.Figure 1 shows how the framework introduced in this International Standard could be integrated into a PDCA model, which can help new and existing users to understand the importance of a systems approach.**Figure 1 — Relationship between PDCA and the framework in this International Standard****0.5 Contents of this International Standard**This International Standard conforms to ISO’s requirements for management system standards. These requirements include a high level structure, identical core text, and common terms with core definitions, designed to benefit users implementing multiple ISO management system standards.This International Standard does not include requirements specific to other management systems, such as those for quality, occupational health and safety, energy or financial management. However, this International Standard enables an organization to use a common approach and risk-based thinking to integrate its environmental management system with the requirements of other management systems.This International Standard contains the requirements used to assess conformity. An organization that wishes to demonstrate conformity with this International Standard can do so by:— making a self-determination and self-declaration, or— seeking confirmation of its conformance by parties having an interest in the organization, such as customers, or— seeking confirmation of its self-declaration by a party external to the organization, or— seeking certification/registration of its environmental management system by an external organization.Annex A provides explanatory information to prevent misinterpretation of the requirements of this International Standard. Annex B shows broad technical correspondence between the previous edition of this International Standard and this edition. Implementation guidance on environmental management systems is included in ISO 14004.In this International Standard, the following verbal forms are used:— “shall” indicates a requirement;— “should” indicates a recommendation;— “may” indicates a permission;— “can” indicates a possibility or a capability.Information marked as “NOTE” is intended to assist the understanding or use of the document. “Notes to entry” used in Clause 3 provide additional information that supplements the terminological data and can contain provisions relating to the use of a term.The terms and definitions in Clause 3 are arranged in conceptual order, with an alphabetical index provided at the end of the document.**Environmental management systems — Requirements with guidance for use****1 Scope**This International Standard specifies the requirements for an environmental management system that an organization can use to enhance its environmental performance. This International Standard is intended for use by an organization seeking to manage its environmental responsibilities in a systematic manner that contributes to the environmental pillar of sustainability.This International Standard helps an organization achieve the intended outcomes of its environmental management system, which provide value for the environment, the organization itself and interested parties. Consistent with the organization’s environmental policy, the intended outcomes of an environmental management system include:— enhancement of environmental performance;— fulfilment of compliance obligations;— achievement of environmental objectives.This International Standard is applicable to any organization, regardless of size, type and nature, and applies to the environmental aspects of its activities, products and services that the organization determines it can either control or influence considering a life cycle perspective. This International Standard does not state specific environmental performance criteria.This International Standard can be used in whole or in part to systematically improve environmental management. Claims of conformity to this International Standard, however, are not acceptable unless all its requirements are incorporated into an organization’s environmental management system and fulfilled without exclusion.**2 Normative references**There are no normative references.**3 Terms and definitions**For the purposes of this document, the following terms and definitions apply.**3.1 Terms related to organization and leadership****3.1.1****management system**set of interrelated or interacting elements of an *organization* (3.1.4) to establish policies and *objectives* (3.2.5) and *processes* (3.3.5) to achieve those objectivesNote 1 to entry: A management system can address a single discipline or several disciplines (e.g. quality, environment, occupational health and safety, energy, financial management).Note 2 to entry: The system elements include the organization’*s* structure, roles and responsibilities, planning and operation, performance evaluation and improvement.Note 3 to entry: The scope of a management system can include the whole of the organization, specific and identified functions of the organization, specific and identified sections of the organization, or one or more functions across a group of organizations.**3.1.2****environmental management system**part of the *management system* (3.1.1) used to manage *environmental aspects* (3.2.2), fulfil *compliance obligations* (3.2.9), and address *risks and opportunities* (3.2.11)**3.1.3****environmental policy**intentions and direction of an *organization* (3.1.4) related to *environmental performance* (3.4.11), as formally expressed by its *top management* (3.1.5)**3.1.4****organization**person or group of people that has its own functions with responsibilities, authorities and relationships to achieve its *objectives* (3.2.5)Note 1 to entry: The concept of organization includes, but is not limited to sole-trader, company, corporation, firm, enterprise, authority, partnership, charity or institution, or part or combination thereof, whether incorporated or not, public or private.**3.1.5****top management**person or group of people who directs and controls an *organization* (3.1.4) at the highest levelNote 1 to entry: Top management has the power to delegate authority and provide resources within the organization.Note 2 to entry: If the scope of the *management system* (3.1.1) covers only part of an organization, then top management refers to those who direct and control that part of the organization.**3.1.6****interested party**person or *organization* (3.1.4) that can affect, be affected by, or perceive itself to be affected by a decision or activityEXAMPLE Customers, communities, suppliers, regulators, non-governmental organizations, investors and employees.Note 1 to entry: To “perceive itself to be affected” means the perception has been made known to the organization.**3.2 Terms related to planning****3.2.1****environment**surroundings in which an *organization* (3.1.4) operates, including air, water, land, natural resources, flora, fauna, humans and their interrelationshipsNote 1 to entry: Surroundings can extend from within an organization to the local, regional and global system.Note 2 to entry: Surroundings can be described in terms of biodiversity, ecosystems, climate or other characteristics.**3.2.2****environmental aspect**element of an *organization’s* (3.1.4) activities or products or services that interacts or can interact with the *environment* (3.2.1)Note 1 to entry: An environmental aspect can cause (an) *environmental impact(s)* (3.2.4). A significant environmental aspect is one that has or can have one or more significant environmental impact(s).Note 2 to entry: Significant environmental aspects are determined by the organization applying one or more criteria.**3.2.3****environmental condition**state or characteristic of the *environment* (3.2.1) as determined at a certain point in time**3.2.4****environmental impact**change to the *environment* (3.2.1), whether adverse or beneficial, wholly or partially resulting from an *organization’s* (3.1.4) *environmental aspects* (3.2.2)**3.2.5****Objective**result to be achievedNote 1 to entry: An objective can be strategic, tactical, or operational.Note 2 to entry: Objectives can relate to different disciplines (such as financial, health and safety, and environmental goals) and can apply at different levels (such as strategic, organization-wide, project, product, service and *process* (3.3.5)).Note 3 to entry: An objective can be expressed in other ways, e.g. as an intended outcome, a purpose, an operational criterion, as an *environmental objective* (3.2.6), or by the use of other words with similar meaning (e.g. aim, goal, or target).**3.2.6****environmental objective***objective* (3.2.5) set by the *organization* (3.1.4) consistent with its *environmental policy* (3.1.3)**3.2.7****prevention of pollution**use of *processes* (3.3.5), practices, techniques, materials, products, services or energy to avoid, reduce or control (separately or in combination) the creation, emission or discharge of any type of pollutant or waste, in order to reduce adverse *environmental impacts* (3.2.4)Note 1 to entry: Prevention of pollution can include source reduction or elimination; process, product or service changes; efficient use of resources; material and energy substitution; reuse; recovery; recycling, reclamation; or treatment.**3.2.8****requirement**need or expectation that is stated, generally implied or obligatoryNote 1 to entry: “Generally implied” means that it is custom or common practice for the *organization* (3.1.4) and *interested parties* (3.1.6) that the need or expectation under consideration is implied.Note 2 to entry: A specified requirement is one that is stated, for example in *documented information* (3.3.2).Note 3 to entry: Requirements other than legal requirements become obligatory when the organization decides to comply with them.**3.2.9****compliance obligations** (preferred term)legal requirements and other requirements (admitted term)legal *requirements* (3.2.8) that an *organization* (3.1.4) has to comply with and other requirements that an organization has to or chooses to comply withNote 1 to entry: Compliance obligations are related to the *environmental management system* (3.1.2).Note 2 to entry: Compliance obligations can arise from mandatory requirements, such as applicable laws and regulations, or voluntary commitments, such as organizational and industry standards, contractual relationships, codes of practice and agreements with community groups or non-governmental organizations.**3.2.10****risk**effect of uncertaintyNote 1 to entry: An effect is a deviation from the expected — positive or negative.Note 2 to entry: Uncertainty is the state, even partial, of deficiency of information related to, understanding or knowledge of, an event, its consequence, or likelihood.Note 3 to entry: Risk is often characterized by reference to potential *“events”* (as defined in ISO Guide 73:2009, 3.5.1.3) and *“consequences”* (as defined in ISO Guide 73:2009, 3.6.1.3), or a combination of these.Note 4 to entry: Risk is often expressed in terms of a combination of the consequences of an event (including changes in circumstances) and the associated *“likelihood”* (as defined in ISO Guide 73:2009, 3.6.1.1) of occurrence.**3.2.11****risks and opportunities**potential adverse effects (threats) and potential beneficial effects (opportunities)**3.3 Terms related to support and operation****3.3.1****competence**ability to apply knowledge and skills to achieve intended results**3.3.2****documented information**information required to be controlled and maintained by an *organization* (3.1.4) and the medium on which it is containedNote 1 to entry: Documented information can be in any format and media, and from any source.Note 2 to entry: Documented information can refer to:— the *environmental management system* (3.1.2), including related *processes* (3.3.5);— information created in order for the organization to operate (can be referred to as documentation);— evidence of results achieved (can be referred to as records).**3.3.3****life cycle**consecutive and interlinked stages of a product (or service) system, from raw material acquisition or generation from natural resources to final disposalNote 1 to entry: The life cycle stages include acquisition of raw materials, design, production, transportation/delivery, use, end-of-life treatment and final disposal.[SOURCE: ISO 14044:2006, 3.1, modified ― The words “(or service)” have been added to the definition and Note 1 to entry has been added.]**3.3.4****outsource** (verb)make an arrangement where an external *organization* (3.1.4) performs part of an organization’s function or *process* (3.3.5)Note 1 to entry: An external organization is outside the scope of the *management system* (3.1.1), although the outsourced function or process is within the scope.**3.3.5****process**set of interrelated or interacting activities which transforms inputs into outputsNote 1 to entry: A process can be documented or not.**3.4 Terms related to performance evaluation and improvement****3.4.1****audit**systematic, independent and documented *process* (3.3.5) for obtaining audit evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilledNote 1 to entry: An internal audit is conducted by the *organization* (3.1.4) itself, or by an external party on its behalf.Note 2 to entry: An audit can be a combined audit (combining two or more disciplines).Note 3 to entry: Independence can be demonstrated by the freedom from responsibility for the activity being audited or freedom from bias and conflict of interest.Note 4 to entry: “Audit evidence” consists of records, statements of fact or other information which are relevant to the audit criteria and are verifiable; and “audit criteria” are the set of policies, procedures or *requirements* (3.2.8) used as a reference against which audit evidence is compared, as defined in ISO 19011:2011, 3.3 and 3.2 respectively.**3.4.2****conformity**fulfilment of a *requirement* (3.2.8)**3.4.3****nonconformity**non-fulfilment of a *requirement* (3.2.8)Note 1 to entry: Nonconformity relates to requirements in this International Standard and additional *environmental management system* (3.1.2) requirements that an *organization* (3.1.4) establishes for itself.**3.4.4****corrective action**action to eliminate the cause of a *nonconformity* (3.4.3) and to prevent recurrenceNote 1 to entry: There can be more than one cause for a nonconformity.**3.4.5****continual improvement**recurring activity to enhance *performance* (3.4.10)Note 1 to entry: Enhancing performance relates to the use of the *environmental management system* (3.1.2) to enhance *environmental performance* (3.4.11) consistent with the *organization’s* (3.1.4) *environmental policy* (3.1.3).Note 2 to entry: The activity need not take place in all areas simultaneously, or without interruption.**3.4.6****effectiveness**extent to which planned activities are realized and planned results achieved**3.4.7****indicator**measurable representation of the condition or status of operations, management or conditions[SOURCE: ISO 14031:2013, 3.15]**3.4.8****monitoring**determining the status of a system, a *process* (3.3.5) or an activityNote 1 to entry: To determine the status, there might be a need to check, supervise or critically observe.**3.4.9****measurement***process* (3.3.5) to determine a value**3.4.10****performance**measurable resultNote 1 to entry: Performance can relate either to quantitative or qualitative findings.Note 2 to entry: Performance can relate to the management of activities, *processes* (3.3.5), products (including services), systems or *organizations* (3.1.4).**3.4.11****environmental performance***performance* (3.4.10) related to the management of *environmental aspects* (3.2.2)Note 1 to entry: For an *environmental management system* (3.1.2), results can be measured against the *organization’s* (3.1.4) *environmental policy* (3.1.3), *environmental objectives* (3.2.6) or other criteria, using *indicators* (3.4.7).**4 Context of the organization****4.1 Understanding the organization and its context**The organization shall determine external and internal issues that are relevant to its purpose and that affect its ability to achieve the intended outcomes of its environmental management system. Such issues shall include environmental conditions being affected by or capable of affecting the organization.**4.2 Understanding the needs and expectations of interested parties**The organization shall determine:a) the interested parties that are relevant to the environmental management system;b) the relevant needs and expectations (i.e. requirements) of these interested parties;c) which of these needs and expectations become its compliance obligations.**4.3 Determining the scope of the environmental management system**The organization shall determine the boundaries and applicability of the environmental management system to establish its scope.When determining this scope, the organization shall consider:a) the external and internal issues referred to in 4.1;b) the compliance obligations referred to in 4.2;c) its organizational units, functions and physical boundaries;d) its activities, products and services;e) its authority and ability to exercise control and influence.Once the scope is defined, all activities, products and services of the organization within that scope need to be included in the environmental management system.The scope shall be maintained as documented information and be available to interested parties.**4.4 Environmental management system**To achieve the intended outcomes, including enhancing its environmental performance, the organization shall establish, implement, maintain and continually improve an environmental management system, including the processes needed and their interactions, in accordance with the requirements of this International Standard.The organization shall consider the knowledge gained in 4.1 and 4.2 when establishing and maintaining the environmental management system.**5 Leadership****5.1 Leadership and commitment**Top management shall demonstrate leadership and commitment with respect to the environmental management system by:a) taking accountability for the effectiveness of the environmental management system;b) ensuring that the environmental policy and environmental objectives are established and are compatible with the strategic direction and the context of the organization;c) ensuring the integration of the environmental management system requirements into the organization’s business processes;d) ensuring that the resources needed for the environmental management system are available;e) communicating the importance of effective environmental management and of conforming to the environmental management system requirements;f) ensuring that the environmental management system achieves its intended outcomes;g) directing and supporting persons to contribute to the effectiveness of the environmental management system;h) promoting continual improvement;i) supporting other relevant management roles to demonstrate their leadership as it applies to their areas of responsibility.NOTE Reference to “business” in this International Standard can be interpreted broadly to mean those activities that are core to the purposes of the organization’s existence.**5.2 Environmental policy**Top management shall establish, implement and maintain an environmental policy that, within the defined scope of its environmental management system:a) is appropriate to the purpose and context of the organization, including the nature, scale and environmental impacts of its activities, products and services;b) provides a framework for setting environmental objectives;c) includes a commitment to the protection of the environment, including prevention of pollution and other specific commitment(s) relevant to the context of the organization;NOTE Other specific commitment(s) to protect the environment can include sustainable resource use, climate change mitigation and adaptation, and protection of biodiversity and ecosystems.d) includes a commitment to fulfil its compliance obligations;e) includes a commitment to continual improvement of the environmental management system to enhance environmental performance.The environmental policy shall:— be maintained as documented information;— be communicated within the organization;— be available to interested parties.**5.3 Organizational roles, responsibilities and authorities**Top management shall ensure that the responsibilities and authorities for relevant roles are assigned and communicated within the organization.Top management shall assign the responsibility and authority for:a) ensuring that the environmental management system conforms to the requirements of this International Standard;b) reporting on the performance of the environmental management system, including environmental performance, to top management.**6 Planning****6.1 Actions to address risks and opportunities****6.1.1 General**The organization shall establish, implement and maintain the process(es) needed to meet the requirements in 6.1.1 to 6.1.4.When planning for the environmental management system, the organization shall consider:a) the issues referred to in 4.1;b) the requirements referred to in 4.2;c) the scope of its environmental management system;and determine the risks and opportunities, related to its environmental aspects (see 6.1.2), compliance obligations (see 6.1.3) and other issues and requirements, identified in 4.1 and 4.2, that need to be addressed to:— give assurance that the environmental management system can achieve its intended outcomes;— prevent or reduce undesired effects, including the potential for external environmental conditions to affect the organization;— achieve continual improvement.Within the scope of the environmental management system, the organization shall determine potential emergency situations, including those that can have an environmental impact.The organization shall maintain documented information of its:— risks and opportunities that need to be addressed;— process(es) needed in 6.1.1 to 6.1.4, to the extent necessary to have confidence they are carried out as planned.**6.1.2 Environmental aspects**Within the defined scope of the environmental management system, the organization shall determine the environmental aspects of its activities, products and services that it can control and those that it can influence, and their associated environmental impacts, considering a life cycle perspective.When determining environmental aspects, the organization shall take into account:a) change, including planned or new developments, and new or modified activities, products and services;b) abnormal conditions and reasonably foreseeable emergency situations.The organization shall determine those aspects that have or can have a significant environmental impact, i.e. significant environmental aspects, by using established criteria.The organization shall communicate its significant environmental aspects among the various levels and functions of the organization, as appropriate.The organization shall maintain documented information of its:— environmental aspects and associated environmental impacts;— criteria used to determine its significant environmental aspects;— significant environmental aspects.NOTE Significant environmental aspects can result in risks and opportunities associated with either adverse environmental impacts (threats) or beneficial environmental impacts (opportunities).**6.1.3 Compliance obligations**The organization shall:a) determine and have access to the compliance obligations related to its environmental aspects;b) determine how these compliance obligations apply to the organization;c) take these compliance obligations into account when establishing, implementing, maintaining and continually improving its environmental management system.The organization shall maintain documented information of its compliance obligations.NOTE Compliance obligations can result in risks and opportunities to the organization.**6.1.4 Planning action**The organization shall plan:a) to take actions to address its:1) significant environmental aspects;2) compliance obligations;3) risks and opportunities identified in 6.1.1;b) how to:1) integrate and implement the actions into its environmental management system processes (see 6.2, Clause 7, Clause 8 and 9.1), or other business processes;2) evaluate the effectiveness of these actions (see 9.1).When planning these actions, the organization shall consider its technological options and its financial, operational and business requirements.**6.2 Environmental objectives and planning to achieve them****6.2.1 Environmental objectives**The organization shall establish environmental objectives at relevant functions and levels, taking into account the organization’s significant environmental aspects and associated compliance obligations, and considering its risks and opportunities.The environmental objectives shall be:a) consistent with the environmental policy;b) measurable (if practicable);c) monitored;d) communicated;e) updated as appropriate.The organization shall maintain documented information on the environmental objectives.**6.2.2 Planning actions to achieve environmental objectives**When planning how to achieve its environmental objectives, the organization shall determine:a) what will be done;b) what resources will be required;c) who will be responsible;d) when it will be completed;e) how the results will be evaluated, including indicators for monitoring progress toward achievement of its measurable environmental objectives (see 9.1.1).The organization shall consider how actions to achieve its environmental objectives can be integrated into the organization’s business processes.**7 Support****7.1 Resources**The organization shall determine and provide the resources needed for the establishment, implementation, maintenance and continual improvement of the environmental management system.**7.2 Competence**The organization shall:a) determine the necessary competence of person(s) doing work under its control that affects its environmental performance and its ability to fulfil its compliance obligations;b) ensure that these persons are competent on the basis of appropriate education, training or experience;c) determine training needs associated with its environmental aspects and its environmental management system;d) where applicable, take actions to acquire the necessary competence, and evaluate the effectiveness of the actions taken.NOTE Applicable actions can include, for example, the provision of training to, the mentoring of, or the reassignment of currently employed persons; or the hiring or contracting of competent persons.The organization shall retain appropriate documented information as evidence of competence.**7.3 Awareness**The organization shall ensure that persons doing work under the organization’s control are aware of:a) the environmental policy;b) the significant environmental aspects and related actual or potential environmental impacts associated with their work;c) their contribution to the effectiveness of the environmental management system, including the benefits of enhanced environmental performance;d) the implications of not conforming with the environmental management system requirements, including not fulfilling the organization’s compliance obligations.**7.4 Communication****7.4.1 General**The organization shall establish, implement and maintain the process(es) needed for internal and external communications relevant to the environmental management system, including:a) on what it will communicate;b) when to communicate;c) with whom to communicate;d) how to communicate.When establishing its communication process(es), the organization shall:— take into account its compliance obligations;— ensure that environmental information communicated is consistent with information generated within the environmental management system, and is reliable.The organization shall respond to relevant communications on its environmental management system.The organization shall retain documented information as evidence of its communications, as appropriate.**7.4.2 Internal communication**The organization shall:a) internally communicate information relevant to the environmental management system among the various levels and functions of the organization, including changes to the environmental management system, as appropriate;b) ensure its communication process(es) enable(s) persons doing work under the organization’s control to contribute to continual improvement.**7.4.3 External communication**The organization shall externally communicate information relevant to the environmental management system, as established by the organization’s communication process(es) and as required by its compliance obligations.**7.5 Documented information****7.5.1 General**The organization’s environmental management system shall include:a) documented information required by this International Standard;b) documented information determined by the organization as being necessary for the effectiveness of the environmental management system.NOTE The extent of documented information for an environmental management system can differ from one organization to another due to:— the size of organization and its type of activities, processes, products and services;— the need to demonstrate fulfilment of its compliance obligations;— the complexity of processes and their interactions;— the competence of persons doing work under the organization’s control.**7.5.2 Creating and updating**When creating and updating documented information, the organization shall ensure appropriate:a) identification and description (e.g. a title, date, author, or reference number);b) format (e.g. language, software version, graphics) and media (e.g. paper, electronic);c) review and approval for suitability and adequacy.**7.5.3 Control of documented information**Documented information required by the environmental management system and by this International Standard shall be controlled to ensure:a) it is available and suitable for use, where and when it is needed;b) it is adequately protected (e.g. from loss of confidentiality, improper use, or loss of integrity).For the control of documented information, the organization shall address the following activities as applicable:— distribution, access, retrieval and use;— storage and preservation, including preservation of legibility;— control of changes (e.g. version control);— retention and disposition.Documented information of external origin determined by the organization to be necessary for the planning and operation of the environmental management system shall be identified, as appropriate, and controlled.NOTE Access can imply a decision regarding the permission to view the documented information only, or the permission and authority to view and change the documented information.**8 Operation****8.1 Operational planning and control**The organization shall establish, implement, control and maintain the processes needed to meet environmental management system requirements, and to implement the actions identified in 6.1 and 6.2, by:— establishing operating criteria for the process(es);— implementing control of the process(es), in accordance with the operating criteria.NOTE Controls can include engineering controls and procedures. Controls can be implemented following a hierarchy (e.g. elimination, substitution, administrative) and can be used individually or in combination.The organization shall control planned changes and review the consequences of unintended changes, taking action to mitigate any adverse effects, as necessary.The organization shall ensure that outsourced processes are controlled or influenced. The type and extent of control or influence to be applied to the process(es) shall be defined within the environmental management system.Consistent with a life cycle perspective, the organization shall:a) establish controls, as appropriate, to ensure that its environmental requirement(s) is (are) addressed in the design and development process for the product or service, considering each life cycle stage;b) determine its environmental requirement(s) for the procurement of products and services, as appropriate;c) communicate its relevant environmental requirement(s) to external providers, including contractors;d) consider the need to provide information about potential significant environmental impacts associated with the transportation or delivery, use, end-of-life treatment and final disposal of its products and services.The organization shall maintain documented information to the extent necessary to have confidence that the processes have been carried out as planned.**8.2 Emergency preparedness and response**The organization shall establish, implement and maintain the process(es) needed to prepare for and respond to potential emergency situations identified in 6.1.1.The organization shall:a) prepare to respond by planning actions to prevent or mitigate adverse environmental impacts from emergency situations;b) respond to actual emergency situations;c) take action to prevent or mitigate the consequences of emergency situations, appropriate to the magnitude of the emergency and the potential environmental impact;d) periodically test the planned response actions, where practicable;e) periodically review and revise the process(es) and planned response actions, in particular after the occurrence of emergency situations or tests;f) provide relevant information and training related to emergency preparedness and response, as appropriate, to relevant interested parties, including persons working under its control.The organization shall maintain documented information to the extent necessary to have confidence that the process(es) is (are) carried out as planned.**9 Performance evaluation****9.1 Monitoring, measurement, analysis and evaluation****9.1.1 General**The organization shall monitor, measure, analyse and evaluate its environmental performance.The organization shall determine:a) what needs to be monitored and measured;b) the methods for monitoring, measurement, analysis and evaluation, as applicable, to ensure valid results;c) the criteria against which the organization will evaluate its environmental performance, and appropriate indicators;d) when the monitoring and measuring shall be performed;e) when the results from monitoring and measurement shall be analysed and evaluated.The organization shall ensure that calibrated or verified monitoring and measurement equipment is used and maintained, as appropriate.The organization shall evaluate its environmental performance and the effectiveness of the environmental management system.The organization shall communicate relevant environmental performance information both internally and externally, as identified in its communication process(es) and as required by its compliance obligations.The organization shall retain appropriate documented information as evidence of the monitoring, measurement, analysis and evaluation results.**9.1.2 Evaluation of compliance**The organization shall establish, implement and maintain the process(es) needed to evaluate fulfilment of its compliance obligations.The organization shall:a) determine the frequency that compliance will be evaluated;b) evaluate compliance and take action if needed;c) maintain knowledge and understanding of its compliance status.The organization shall retain documented information as evidence of the compliance evaluation result(s).**9.2 Internal audit****9.2.1 General**The organization shall conduct internal audits at planned intervals to provide information on whether the environmental management system:a) conforms to:1) the organization’s own requirements for its environmental management system;2) the requirements of this International Standard;b) is effectively implemented and maintained.**9.2.2 Internal audit programme**The organization shall establish, implement and maintain (an) internal audit programme(s), including the frequency, methods, responsibilities, planning requirements and reporting of its internal audits.When establishing the internal audit programme, the organization shall take into consideration the environmental importance of the processes concerned, changes affecting the organization and the results of previous audits.The organization shall:a) define the audit criteria and scope for each audit;b) select auditors and conduct audits to ensure objectivity and the impartiality of the audit process;c) ensure that the results of the audits are reported to relevant management.The organization shall retain documented information as evidence of the implementation of the audit programme and the audit results.**9.3 Management review**Top management shall review the organization’s environmental management system, at planned intervals, to ensure its continuing suitability, adequacy and effectiveness.The management review shall include consideration of:a) the status of actions from previous management reviews;b) changes in:1) external and internal issues that are relevant to the environmental management system;2) the needs and expectations of interested parties, including compliance obligations;3) its significant environmental aspects;4) risks and opportunities;c) the extent to which environmental objectives have been achieved;d) information on the organization’s environmental performance, including trends in:1) nonconformities and corrective actions;2) monitoring and measurement results;3) fulfilment of its compliance obligations;4) audit results;e) adequacy of resources;f) relevant communication(s) from interested parties, including complaints;g) opportunities for continual improvement.The outputs of the management review shall include:— conclusions on the continuing suitability, adequacy and effectiveness of the environmental management system;— decisions related to continual improvement opportunities;— decisions related to any need for changes to the environmental management system, including resources;— actions, if needed, when environmental objectives have not been achieved;— opportunities to improve integration of the environmental management system with other business processes, if needed;— any implications for the strategic direction of the organization.The organization shall retain documented information as evidence of the results of management reviews.**10 Improvement****10.1 General**The organization shall determine opportunities for improvement (see 9.1, 9.2 and 9.3) and implement necessary actions to achieve the intended outcomes of its environmental management system.**10.2 Nonconformity and corrective action**When a nonconformity occurs, the organization shall:a) react to the nonconformity and, as applicable:1) take action to control and correct it;2) deal with the consequences, including mitigating adverse environmental impacts;b) evaluate the need for action to eliminate the causes of the nonconformity, in order that it does not recur or occur elsewhere, by:1) reviewing the nonconformity;2) determining the causes of the nonconformity;3) determining if similar nonconformities exist, or could potentially occur;c) implement any action needed;d) review the effectiveness of any corrective action taken;e) make changes to the environmental management system, if necessary.Corrective actions shall be appropriate to the significance of the effects of the nonconformities encountered, including the environmental impact(s).The organization shall retain documented information as evidence of:— the nature of the nonconformities and any subsequent actions taken;— the results of any corrective action.**10.3 Continual improvement**The organization shall continually improve the suitability, adequacy and effectiveness of the environmental management system to enhance environmental performance.**Annex A**(informative)**Guidance on the use of this International Standard****A.1 General**The explanatory information given in this annex is intended to prevent misinterpretation of the requirements contained in this International Standard. While this information addresses and is consistent with these requirements, it is not intended to add to, subtract from, or in any way modify them.The requirements in this International Standard need to be viewed from a systems or holistic perspective. The user should not read a particular sentence or clause of this International Standard in isolation from other clauses. There is an interrelationship between the requirements in some clauses and the requirements in other clauses. For example, the organization needs to understand the relationship between the commitments in its environmental policy and the requirements that are specified in other clauses.Management of change is an important part of maintaining the environmental management system that ensures the organization can achieve the intended outcomes of its environmental management system on an ongoing basis. Management of change is addressed in various requirements of this International Standard, including— maintaining the environmental management system (see 4.4),— environmental aspects (see 6.1.2),— internal communication (see 7.4.2),— operational control (see 8.1),— internal audit programme (see 9.2.2), and— management review (see 9.3).As part of managing change, the organization should address planned and unplanned changes to ensure that the unintended consequences of these changes do not have a negative effect on the intended outcomes of the environmental management system. Examples of change include:— planned changes to products, processes, operations, equipment or facilities;— changes in staff or external providers, including contractors;— new information related to environmental aspects, environmental impacts and related technologies;— changes in compliance obligations.**A.2 Clarification of structure and terminology**The clause structure and some of the terminology of this International Standard have been changed to improve alignment with other management systems standards. There is, however, no requirement in this International Standard for its clause structure or terminology to be applied to an organization’s environmental management system documentation. There is no requirement to replace the terms used by an organization with the terms used in this International Standard. Organizations can choose to use terms that suit their business, e.g. “records”, “documentation”, or “protocols”, rather than “documented information”.**A.3 Clarification of concepts**In addition to the terms and definitions given in Clause 3, clarification of selected concepts is provided below to prevent misunderstanding.— In this International Standard, the use of the word “any” implies selection or choice.— The words “appropriate” and “applicable” are not interchangeable. “Appropriate” means suitable (for, to) and implies some degree of freedom, while “applicable” means relevant or possible to apply and implies that if it can be done, it needs to be done.— The word “consider” means it is necessary to think about the topic but it can be excluded; whereas “take into account” means it is necessary to think about the topic but it cannot be excluded.— “Continual” indicates duration that occurs over a period of time, but with intervals of interruption (unlike “continuous” which indicates duration without interruption). “Continual” is therefore the appropriate word to use when referring to improvement.— In this International Standard, the word “effect” is used to describe the result of a change to the organization. The phrase “environmental impact” refers specifically to the result of a change to the environment.— The word “ensure” means the responsibility can be delegated, but not the accountability.— This International Standard uses the term “interested party”; the term “stakeholder” is a synonym as it represents the same concept.This International Standard uses some new terminology. A brief explanation is given below to aid both new users and those who have used previous editions of this International Standard.— The phrase “compliance obligations” replaces the phrase “legal requirements and other requirements to which the organization subscribes” used in the previous edition of this International Standard. The intent of this new phrase does not differ from that of the previous edition.— “Documented information” replaces the nouns “documentation”, “documents” and “records” used in previous editions of this International Standard. To distinguish the intent of the generic term “documented information”, this International Standard now uses the phrase “retain documented information as evidence of....” to mean records, and “maintain documented information” to mean documentation other than records. The phrase “as evidence of….” is not a requirement to meet legal evidentiary requirements; its intent is only to indicate objective evidence needs to be retained.— The phrase “external provider” means an external supplier organization (including a contractor) that provides a product or a service.— The change from “identify” to “determine” is intended to harmonize with the standardized management system terminology. The word “determine” implies a discovery process that results in knowledge. The intent does not differ from that of previous editions.— The phrase “intended outcome” is what the organization intends to achieve by implementing its environmental management system. The minimal intended outcomes include enhancement of environmental performance, fulfilment of compliance obligations and achievement of environmental objectives. Organizations can set additional intended outcomes for their environmental management system. For example, consistent with their commitment to protection of the environment, an organization may establish an intended outcome to work towards sustainable development.— The phrase “person(s) doing work under its control” includes persons working for the organization and those working on its behalf for which the organization has responsibility (e.g. contractors). It replaces the phrase “persons working for it or on its behalf” and “persons working for or on behalf of the organization” used in the previous edition of this International Standard. The intent of this new phrase does not differ from that of the previous edition.— The concept of “target” used in previous editions of this International Standard is captured within the term “environmental objective”.**A.4 Context of the organization****A.4.1 Understanding the organization and its context**The intent of 4.1 is to provide a high-level, conceptual understanding of the important issues that can affect, either positively or negatively, the way the organization manages its environmental responsibilities. Issues are important topics for the organization, problems for debate and discussion or changing circumstances that affect the organization’s ability to achieve the intended outcomes it sets for its environmental management system.Examples of internal and external issues which can be relevant to the context of the organization include:a) environmental conditions related to climate, air quality, water quality, land use, existing contamination, natural resource availability and biodiversity, that can either affect the organization’s purpose, or be affected by its environmental aspects;b) the external cultural, social, political, legal, regulatory, financial, technological, economic, natural and competitive circumstances, whether international, national, regional or local;c) the internal characteristics or conditions of the organization, such as its activities, products and services, strategic direction, culture and capabilities (i.e. people, knowledge, processes, systems).An understanding of the context of an organization is used to establish, implement, maintain and continually improve its environmental management system (see 4.4). The internal and external issues that are determined in 4.1 can result in risks and opportunities to the organization or to the environmental management system (see 6.1.1 to 6.1.3). The organization determines those that need to be addressed and managed (see 6.1.4, 6.2, Clause 7, Clause 8 and 9.1).**A.4.2 Understanding the needs and expectations of interested parties**An organization is expected to gain a general (i.e. high-level, not detailed) understanding of the expressed needs and expectations of those internal and external interested parties that have been determined by the organization to be relevant. The organization considers the knowledge gained when determining which of these needs and expectations it has to or it chooses to comply with, i.e. its compliance obligations (see 6.1.1).In the case of an interested party perceiving itself to be affected by the organization’s decisions or activities related to environmental performance, the organization considers the relevant needs and expectations that are made known or have been disclosed by the interested party to the organization.Interested party requirements are not necessarily requirements of the organization. Some interested party requirements reflect needs and expectations that are mandatory because they have been incorporated into laws, regulations, permits and licenses by governmental or even court decision. The organization may decide to voluntarily agree to or adopt other requirements of interested parties (e.g. entering into a contractual relationship, subscribing to a voluntary initiative). Once the organization adopts them, they become organizational requirements (i.e. compliance obligations) and are taken into account when planning the environmental management system (see 4.4). A more detailed-level analysis of its compliance obligations is performed in 6.1.3.**A.4.3 Determining the scope of the environmental management system**The scope of the environmental management system is intended to clarify the physical and organizational boundaries to which the environmental management system applies, especially if the organization is a part of a larger organization. An organization has the freedom and flexibility to define its boundaries. It may choose to implement this International Standard throughout the entire organization, or only in (a) specific part(s) of the organization, as long as the top management for that (those) part(s) has authority to establish an environmental management system.In setting the scope, the credibility of the environmental management system depends upon the choice of organizational boundaries. The organization considers the extent of control or influence that it can exert over activities, products and services considering a life cycle perspective. Scoping should not be used to exclude activities, products, services, or facilities that have or can have significant environmental aspects, or to evade its compliance obligations. The scope is a factual and representative statement of the organization’s operations included within its environmental management system boundaries that should not mislead interested parties.Once the organization asserts it conforms to this International Standard, the requirement to make the scope statement available to interested parties applies.**A.4.4 Environmental management system**The organization retains authority and accountability to decide how it fulfils the requirements of this International Standard, including the level of detail and extent to which it:a) establishes one or more processes to have confidence that it (they) is (are) controlled, carried out as planned and achieve the desired results;b) integrates environmental management system requirements into its various business processes, such as design and development, procurement, human resources, sales and marketing;c) incorporates issues associated with the context of the organization (see 4.1) and interested party requirements (see 4.2) within its environmental management system. If this International Standard is implemented for (a) specific part(s) of an organization, policies, processes and documented information developed by other parts of the organization can be used to meet the requirements of this International Standard, provided they are applicable to that (those) specific part(s).For information on maintaining the environmental management system as part of management of change, see Clause A.1.**A.5 Leadership****A.5.1 Leadership and commitment**To demonstrate leadership and commitment, there are specific responsibilities related to the environmental management system in which top management should be personally involved or which top management should direct. Top management may delegate responsibility for these actions to others, but it retains accountability for ensuring the actions are performed.**A.5.2 Environmental policy**An environmental policy is a set of principles stated as commitments in which top management outlines the intentions of the organization to support and enhance its environmental performance. The environmental policy enables the organization to set its environmental objectives (see 6.2), take actions to achieve the intended outcomes of the environmental management system, and achieve continual improvement (see Clause 10).Three basic commitments for the environmental policy are specified in this International Standard to:a) protect the environment;b) fulfil the organization’s compliance obligations;c) continually improve the environmental management system to enhance environmental performance.These commitments are then reflected in the processes an organization establishes to address specific requirements in this International Standard, to ensure a robust, credible and reliable environmental management system.The commitment to protect the environment is intended to not only prevent adverse environmental impacts through prevention of pollution, but to protect the natural environment from harm and degradation arising from the organization’s activities, products and services. The specific commitment(s) an organization pursues should be relevant to the context of the organization, including the local or regional environmental conditions. These commitments can address, for example, water quality, recycling, or air quality, and can also include commitments related to climate change mitigation and adaptation, protection of biodiversity and ecosystems, and restoration.While all the commitments are important, some interested parties are especially concerned with the organization’s commitment to fulfil its compliance obligations, particularly applicable legal requirements. This International Standard specifies a number of interconnected requirements related to this commitment. These include the need to:— determine compliance obligations;— ensure operations are carried out in accordance with these compliance obligations;— evaluate fulfilment of the compliance obligations;— correct nonconformities.**A.5.3 Organizational roles, responsibilities and authorities**Those involved in the organization’s environmental management system should have a clear understanding of their role, responsibility(ies) and authority(ies) for conforming to the requirements of this International Standard and achieving the intended outcomes.The specific roles and responsibilities identified in 5.3 may be assigned to an individual, sometimes referred to as the “management representative”, shared by several individuals, or assigned to a member of top management.**A.6 Planning****A.6.1 Actions to address risks and opportunities****A.6.1.1 General**The overall intent of the process(es) established in 6.1.1 is to ensure that the organization is able to achieve the intended outcomes of its environmental management system, to prevent or reduce undesired effects, and to achieve continual improvement. The organization can ensure this by determining its risks and opportunities that need to be addressed and planning action to address them. These risks and opportunities can be related to environmental aspects, compliance obligations, other issues or other needs and expectations of interested parties.Environmental aspects (see 6.1.2) can create risks and opportunities associated with adverse environmental impacts, beneficial environmental impacts, and other effects on the organization. The risks and opportunities related to environmental aspects can be determined as part of the significance evaluation or determined separately.Compliance obligations (see 6.1.3) can create risks and opportunities, such as failing to comply (which can damage the organization’s reputation or result in legal action) or performing beyond its compliance obligations (which can enhance the organization’s reputation).The organization can also have risks and opportunities related to other issues, including environmental conditions or needs and expectations of interested parties, which can affect the organization’s ability to achieve the intended outcomes of its environmental management system, e.g.a) environmental spillage due to literacy or language barriers among workers who cannot understand local work procedures;b) increased flooding due to climate change that could affect the organizations premises;c) lack of available resources to maintain an effective environmental management system due to economic constraints;d) introducing new technology financed by governmental grants, which could improve air quality;e) water scarcity during periods of drought that could affect the organization’s ability to operate its emission control equipment.Emergency situations are unplanned or unexpected events that need the urgent application of specific competencies, resources or processes to prevent or mitigate their actual or potential consequences. Emergency situations can result in adverse environmental impacts or other effects on the organization. When determining potential emergency situations (e.g. fire, chemical spill, severe weather), the organization should consider:— the nature of onsite hazards (e.g. flammable liquids, storage tanks, compressed gasses);— the most likely type and scale of an emergency situation;— the potential for emergency situations at a nearby facility (e.g. plant, road, railway line).Although risks and opportunities need to be determined and addressed, there is no requirement for formal risk management or a documented risk management process. It is up to the organization to select the method it will use to determine its risks and opportunities. The method may involve a simple qualitative process or a full quantitative assessment depending on the context in which the organization operates.The risks and opportunities identified (see 6.1.1 to 6.1.3) are inputs for planning actions (see 6.1.4) and for establishing the environmental objectives (see 6.2).**A.6.1.2 Environmental aspects**An organization determines its environmental aspects and associated environmental impacts, and determines those that are significant and, therefore, need to be addressed by its environmental management system.Changes to the environment, either adverse or beneficial, that result wholly or partially from environmental aspects are called environmental impacts. The environmental impact can occur at local, regional and global scales, and also can be direct, indirect or cumulative by nature. The relationship between environmental aspects and environmental impacts is one of cause and effect.When determining environmental aspects, the organization considers a life cycle perspective. This does not require a detailed life cycle assessment; thinking carefully about the life cycle stages that can be controlled or influenced by the organization is sufficient. Typical stages of a product (or service) life cycle include raw material acquisition, design, production, transportation/delivery, use, end-of life treatment and final disposal. The life cycle stages that are applicable will vary depending on the activity, product or service.An organization needs to determine the environmental aspects within the scope of its environmental management system. It takes into account the inputs and outputs (both intended and unintended) that are associated with its current and relevant past activities, products and services; planned or new developments; and new or modified activities, products and services. The method used should consider normal and abnormal operating conditions, shut-down and start-up conditions, as well as the reasonably foreseeable emergency situations identified in 6.1.1. Attention should be paid to prior occurrences of emergency situations. For information on environmental aspects as part of managing change, see Clause A.1.An organization does not have to consider each product, component or raw material individually to determine and evaluate their environmental aspects; it may group or categorize activities, products and services when they have common characteristics.When determining its environmental aspects, the organization can consider:a) emissions to air;b) releases to water;c) releases to land;d) use of raw materials and natural resources;e) use of energy;f) energy emitted (e.g. heat, radiation, vibration (noise), light);g) generation of waste and/or by-products;h) use of space.In addition to the environmental aspects that it can control directly, an organization determines whether there are environmental aspects that it can influence. These can be related to products and services used by the organization which are provided by others, as well as products and services that it provides to others, including those associated with (an) outsourced process(es). With respect to those an organization provides to others, it can have limited influence on the use and end-of-life treatment of the products and services. In all circumstances, however, it is the organization that determines the extent of control it is able to exercise, the environmental aspects it can influence, and the extent to which it chooses to exercise such influence.Consideration should be given to environmental aspects related to the organization’s activities, products and services, such as:— design and development of its facilities, processes, products and services;— acquisition of raw materials, including extraction;— operational or manufacturing processes, including warehousing;— operation and maintenance of facilities, organizational assets and infrastructure;— environmental performance and practices of external providers;— product transportation and service delivery, including packaging;— storage, use and end-of-life treatment of products;— waste management, including reuse, refurbishing, recycling and disposal.There is no single method for determining significant environmental aspects, however, the method and criteria used should provide consistent results. The organization sets the criteria for determining its significant environmental aspects. Environmental criteria are the primary and minimum criteria for assessing environmental aspects. Criteria can relate to the environmental aspect (e.g. type, size, frequency) or the environmental impact (e.g. scale, severity, duration, exposure). Other criteria may also be used. An environmental aspect might not be significant when only considering environmental criteria. It can, however, reach or exceed the threshold for determining significance when other criteria are considered. These other criteria can include organizational issues, such as legal requirements or interested party concerns. These other criteria are not intended to be used to downgrade an aspect that is significant based on its environmental impact.A significant environmental aspect can result in one or more significant environmental impacts, and can therefore result in risks and opportunities that need to be addressed to ensure the organization can achieve the intended outcomes of its environmental management system.**A.6.1.3 Compliance obligations**The organization determines, at a sufficiently detailed level, the compliance obligations it identified in 4.2 that are applicable to its environmental aspects, and how they apply to the organization. Compliance obligations include legal requirements that an organization has to comply with and other requirements that the organization has to or chooses to comply with.Mandatory legal requirements related to an organization’s environmental aspects can include, if applicable:a) requirements from governmental entities or other relevant authorities;b) international, national and local laws and regulations;c) requirements specified in permits, licenses or other forms of authorization;d) orders, rules or guidance from regulatory agencies;e) judgements of courts or administrative tribunals.Compliance obligations also include other interested party requirements related to its environmental management system which the organization has to or chooses to adopt. These can include, if applicable:— agreements with community groups or non-governmental organizations;— agreements with public authorities or customers;— organizational requirements;— voluntary principles or codes of practice;— voluntary labelling or environmental commitments;— obligations arising under contractual arrangements with the organization;— relevant organizational or industry standards.**A.6.1.4 Planning action**The organization plans, at a high level, the actions that have to be taken within the environmental management system to address its significant environmental aspects, its compliance obligations, and the risks and opportunities identified in 6.1.1 that are a priority for the organization to achieve the intended outcomes of its environmental management system.The actions planned may include establishing environmental objectives (see 6.2) or may be incorporated into other environmental management system processes, either individually or in combination. Some actions may be addressed through other management systems, such as those related to occupational health and safety or business continuity, or through other business processes related to risk, financial or human resource management.When considering its technological options, an organization should consider the use of best-available techniques, where economically viable, cost-effective and judged appropriate. This is not intended to imply that organizations are obliged to use environmental cost-accounting methodologies.**A.6.2 Environmental objectives and planning to achieve them**Top management may establish environmental objectives at the strategic level, the tactical level or the operational level. The strategic level includes the highest levels of the organization and the environmental objectives can be applicable to the whole organization. The tactical and operational levels can include environmental objectives for specific units or functions within the organization and should be compatible with its strategic direction. Environmental objectives should be communicated to persons working under the organization’s control who have the ability to influence the achievement of environmental objectives.The requirement to “take into account significant environmental aspects” does not mean that an environmental objective has to be established for each significant environmental aspect, however, these have a high priority when establishing environmental objectives. “Consistent with the environmental policy” means that the environmental objectives are broadly aligned and harmonized with the commitments made by top management in the environmental policy, including the commitment to continual improvement.Indicators are selected to evaluate the achievement of measurable environmental objectives. “Measurable” means it is possible to use either quantitative or qualitative methods in relation to a specified scale to determine if the environmental objective has been achieved. By specifying “if practicable”, it is acknowledged that there can be situations when it is not feasible to measure an environmental objective, however, it is important that the organization is able to determine whether or not an environmental objective has been achieved.For additional information on environmental indicators, see ISO 14031.**A.7 Support****A.7.1 Resources**Resources are needed for the effective functioning and improvement of the environmental management system and to enhance environmental performance. Top management should ensure that those with environmental management system responsibilities are supported with the necessary resources. Internal resources may be supplemented by (an) external provider(s).Resources can include human resources, natural resources, infrastructure, technology and financial resources. Examples of human resources include specialized skills and knowledge. Examples of infrastructure resources include the organization’s buildings, equipment, underground tanks and drainage system.**A.7.2 Competence**The competency requirements of this International Standard apply to persons working under the organization’s control who affect its environmental performance, including persons:a) whose work has the potential to cause a significant environmental impact;b) who are assigned responsibilities for the environmental management system, including those who:1) determine and evaluate environmental impacts or compliance obligations;2) contribute to the achievement of an environmental objective;3) respond to emergency situations;4) perform internal audits;5) perform evaluations of compliance.**A.7.3 Awareness**Awareness of the environmental policy should not be taken to mean that the commitments need to be memorized or that persons doing work under the organization’s control have a copy of the documented environmental policy. Rather, these persons should be aware of its existence, its purpose and their role in achieving the commitments, including how their work can affect the organization’s ability to fulfil its compliance obligations.**A.7.4 Communication**Communication allows the organization to provide and obtain information relevant to its environmental management system, including information related to its significant environmental aspects, environmental performance, compliance obligations and recommendations for continual improvement. Communication is a two-way process, in and out of the organization.When establishing its communication process(es), the internal organizational structure should be considered to ensure communication with the most appropriate levels and functions. A single approach can be adequate to meet the needs of many different interested parties, or multiple approaches might be necessary to address specific needs of individual interested parties.The information received by the organization can contain requests from interested parties for specific information related to the management of its environmental aspects, or can contain general impressions or views on the way the organization carries out that management. These impressions or views can be positive or negative. In the latter case (e.g. complaints), it is important that a prompt and clear answer is provided by the organization. A subsequent analysis of these complaints can provide valuable information for detecting improvement opportunities for the environmental management system. Communication should:a) be transparent, i.e. the organization is open in the way it derives what it has reported on;b) be appropriate, so that information meets the needs of relevant interested parties, enabling them to participate;c) be truthful and not misleading to those who rely on the information reported;d) be factual, accurate and able to be trusted;e) not exclude relevant information;f) be understandable to interested parties.For information on communication as part of managing change, see Clause A.1. For additional information on communication, see ISO 14063.**A.7.5 Documented information**An organization should create and maintain documented information in a manner sufficient to ensure a suitable, adequate and effective environmental management system. The primary focus should be on the implementation of the environmental management system and on environmental performance, not on a complex documented information control system.In addition to the documented information required in specific clauses of this International Standard, an organization may choose to create additional documented information for purposes of transparency, accountability, continuity, consistency, training, or ease in auditing.Documented information originally created for purposes other than the environmental management system may be used. The documented information associated with the environmental management system may be integrated with other information management systems implemented by the organization. It does not have to be in the form of a manual.**A.8 Operation****A.8.1 Operational planning and control**The type and extent of operational control(s) depend on the nature of the operations, the risks and opportunities, significant environmental aspects and compliance obligations. An organization has the flexibility to select the type of operational control methods, individually or in combination, that are necessary to make sure the process(es) is (are) effective and achieve(s) the desired results. Such methods can include:a) designing (a) process(es) in such a way as to prevent error and ensure consistent results;b) using technology to control (a) process(es) and prevent adverse results (i.e. engineering controls);c) using competent personnel to ensure the desired results;d) performing (a) process(es) in a specified way;e) monitoring or measuring (a) process(es) to check the results;f) determining the use and amount of documented information necessary.The organization decides the extent of control needed within its own business processes (e.g. procurement process) to control or influence (an) outsourced process(es) or (a) provider(s) of products and services. Its decision should be based upon factors such as:— knowledge, competence and resources, including:— the competence of the external provider to meet the organization’s environmental management system requirements;— the technical competence of the organization to define appropriate controls or assess the adequacy of controls;— the importance and potential effect the product and service will have on the organization’s ability to achieve the intended outcome of its environmental management system;— the extent to which control of the process is shared;— the capability of achieving the necessary control through the application of its general procurement process;— improvement opportunities available.When a process is outsourced, or when products and services are supplied by (an) external provider(s), the organization’s ability to exert control or influence can vary from direct control to limited or no influence. In some cases, an outsourced process performed onsite might be under the direct control of an organization; in other cases, an organization’s ability to influence an outsourced process or external supplier might be limited.When determining the type and extent of operational controls related to external providers, including contractors, the organization may consider one or more factors such as:— environmental aspects and associated environmental impacts;— risks and opportunities associated with the manufacturing of its products or the provision of its services;— the organization’s compliance obligations.For information on operational control as part of managing change, see Clause A.1. For information on life cycle perspective, see A.6.1.2.An outsourced process is one that fulfils all of the following:— it is within the scope of the environmental management system;— it is integral to the organization’s functioning;— it is needed for the environmental management system to achieve its intended outcome;— liability for conforming to requirements is retained by the organization;— the organization and the external provider have a relationship where the process is perceived by interested parties as being carried out by the organization.Environmental requirements are the organization’s environmentally-related needs and expectations that it establishes for, and communicates to, its interested parties (e.g. an internal function, such as procurement; a customer; an external provider).Some of the organization’s significant environmental impacts can occur during the transportation, delivery, use, end-of-life treatment or final disposal of its product or service. By providing information, an organization can potentially prevent or mitigate adverse environmental impacts during these life cycle stages.**A.8.2 Emergency preparedness and response**It is the responsibility of each organization to be prepared and to respond to emergency situations in a manner appropriate to its particular needs. For information on determining emergency situations, see A.6.1.1.When planning its emergency preparedness and response process(es), the organization should consider:a) the most appropriate method(s) for responding to an emergency situation;b) internal and external communication process(es);c) the action(s) required to prevent or mitigate environmental impacts;d) mitigation and response action(s) to be taken for different types of emergency situations;e) the need for post-emergency evaluation to determine and implement corrective actions;f) periodic testing of planned emergency response actions;g) training of emergency response personnel;h) a list of key personnel and aid agencies, including contact details (e.g. fire department, spillage clean-up services);i) evacuation routes and assembly points;j) the possibility of mutual assistance from neighbouring organizations.**A.9 Performance evaluation****A.9.1 Monitoring, measurement, analysis and evaluation****A.9.1.1 General**When determining what should be monitored and measured, in addition to progress on environmental objectives, the organization should take into account its significant environmental aspects, compliance obligations and operational controls.The methods used by the organization to monitor and measure, analyse and evaluate should be defined in the environmental management system, in order to ensure that:a) the timing of monitoring and measurement is coordinated with the need for analysis and evaluation results;b) the results of monitoring and measurement are reliable, reproducible and traceable;c) the analysis and evaluation are reliable and reproducible, and enable the organization to report trends.The environmental performance analysis and evaluation results should be reported to those with responsibility and authority to initiate appropriate action.For additional information on environmental performance evaluation, see ISO 14031.**A.9.1.2 Evaluation of compliance**The frequency and timing of compliance evaluations can vary depending on the importance of the requirement, variations in operating conditions, changes in compliance obligations and the organization’s past performance. An organization can use a variety of methods to maintain its knowledge and understanding of its compliance status, however, all compliance obligations need to be evaluated periodically.If compliance evaluation results indicate a failure to fulfil a legal requirement, the organization needs to determine and implement the actions necessary to achieve compliance. This might require communication with a regulatory agency and agreement on a course of action to fulfil its legal requirements. Where such an agreement is in place, it becomes a compliance obligation.A non-compliance is not necessarily elevated to a nonconformity if, for example, it is identified and corrected by the environmental management system processes. Compliance-related nonconformities need to be corrected, even if those nonconformities have not resulted in actual non-compliance with legal requirements.**A.9.2 Internal audit**Auditors should be independent of the activity being audited, wherever practicable, and should in all cases act in a manner that is free from bias and conflict of interest.Nonconformities identified during internal audits are subject to appropriate corrective action.When considering the results of previous audits, the organization should include:a) previously identified nonconformities and the effectiveness of the actions taken;b) results of internal and external audits.For additional information on establishing an internal audit programme, performing environmental management system audits and evaluating the competence of audit personnel, see ISO 19011. For information on internal audit programme as part of managing change, see Clause A.1.**A.9.3 Management review**The management review should be high-level; it does not need to be an exhaustive review of detailed information. The management review topics need not be addressed all at once. The review may take place over a period of time and can be part of regularly scheduled management activities, such as board or operational meetings; it does not need to be a separate activity.Relevant complaints received from interested parties are reviewed by top management to determine opportunities for improvement.For information on management review as part of managing change, see Clause A.1.“Suitability” refers to how the environmental management system fits the organization, its operations, culture and business systems. “Adequacy” refers to whether it meets the requirements of this International Standard and is implemented appropriately. “Effectiveness” refers to whether it is achieving the desired results.**A.10 Improvement****A.10.1 General**The organization should consider the results from analysis and evaluation of environmental performance, evaluation of compliance, internal audits and management review when taking action to improve.Examples of improvement include corrective action, continual improvement, breakthrough change, innovation and re-organization.**A.10.2 Nonconformity and corrective action**One of the key purposes of an environmental management system is to act as a preventive tool. The concept of preventive action is now captured in 4.1 (i.e. understanding the organization and its context) and 6.1 (i.e. actions to address risks and opportunities).**A.10.3 Continual improvement**The rate, extent and timescale of actions that support continual improvement are determined by the organization. Environmental performance can be enhanced by applying the environmental management system as a whole or improving one or more of its elements.**Annex B**(informative)**Correspondence between ISO 14001:2015 and ISO 14001:2004****（略）****Bibliography**[1] ISO 14004, *Environmental management systems — General guidelines on principles, systems and support techniques*[2] ISO 14006, *Environmental management systems — Guidelines for incorporating ecodesign*[3] ISO 14031, *Environmental management — Environmental performance evaluation — Guidelines*[4] ISO 14044, *Environmental management — Life cycle assessment — Requirements and guidelines*[5] ISO 14063, *Environmental management — Environmental communication — Guidelines and examples*[6] ISO 19011, *Guidelines for auditing management systems*[7] ISO 31000, *Risk management — Principles and guidelines*[8] ISO 50001, *Energy management systems — Requirements with guidance for use*[9] ISO Guide 73, *Risk management — Vocabulary* | 环境管理体系 要求及使用指南 GB/T24001-2016 idt ISO14001:2015 代替GB/T24001-2004 （正式发布稿） 2016-10-13 发布 2017-05-01 实施引言… 1 范围... 2规范性引用文件 ..... 3术语和定义 ...... 3.1与组织和领导作用有关的术语………… 3.2与策划有关的术语…… 3.3与支持和运行有关的术语… 3.4与绩效评价和改进有关的术语… 4组织所处的环境……… 4.1理解组织及其所处的环境…… 4.2理解相关方的需求和期望… 4.3确定环境管理体系的范围… 4.4环境管理体系………………… 5领导作用…… 5.1领导作用与承诺… 5.2环境方针............ 5.3组织的角色、职责和权限 .... 6. 策划......... 6.1应对风险和机遇的措施 .. 6.1.1总则 6.1.2环境因素.......... 6.1.3合规义务.... 6.1.4措施的策划...... 6.2环境目标及其实现的策划 .... 6.2.1环境目标....... 6.2.2实现环境目标的措施的策划 . 7.支持..... 7.1资源 .. 7.2能力 ...... 7.3意识 ..... 7.4信息交流.... 7.4.1总则 ..... 7.4.2内部信息交流 ..... 7.4.3外部信息交流 ..... 7.5文件化信息 ..... 7.5.1总则 ... 7.5.2创建和更新.... 7.5.3文件化信息的控制 ..... 8运行..... 8.1运行策划和控制 ... 8.2应急准备和响应 ...... 9绩效评价 ..... 9.1监视、测量、分析和评价 . 9.1.1总则 ....... 9.1.2合规性评价...... 9.2内部审核..... 9.2.1总则 ...... 9.2.2内部审核方案 ...... 9.3管理评审..... 10改进 ... 10.1总则 .... 10.2 不符合和纠正措施 ....... 10.3持续改进........ 附录A（资料性附录）本标准使用指南...... 附录B（资料性附录）GB/T24001-2016与GB/T24001-2004的对应情况 参考文献… 引 言 **0.1** 背景 为了既满足当代人的需求，又不损害后代人满足其需求的能力，必须实现环境、社会和经济三者之间的平衡。通过平衡这“三大支柱”的可持续性，以实现可持续发展目标。 随着法律法规的日趋严格，以及因污染、资源的低效使用、废物管理不当、气候变化、生态系统退化、生物多样性减少等给环境造成的压力不断增大，社会对可持续发展、透明度和责任的期望值已发生了变化。 因此，各组织通过实施环境管理体系，采用系统的方法进行环境管理，以期为“环境支柱”的可持续性做出贡献。 **0.2** 环境管理体系的目的 本标准旨在为各组织提供框架，以保护环境，响应变化的环境状况，同时与社会经济需求保持平衡。本标准规定了环境管理体系的要求，使组织能够实现其设定的环境管理体系的预期结果。 环境管理的系统方法可向最高管理者提供信息，通过下列途径以获得长期成功，并为促进可持续发展创建可选方案： ——预防或减轻不利环境影响以保护环境； ——减轻环境状况对组织的潜在不利影响； ——帮助组织履行合规义务； ——提升环境绩效； ——运用生命周期观点，控制或影响组织的产品和服务的设计、制造、交付、消费和处置的方式，能够防止环境影响被无意地转移到生命周期的其他阶段； ——实施环境友好的、且可巩固组织市场地位的可选方案，以获得财务和运营收益； ——与有关的相关方沟通环境信息。 本标准不拟增加或改变对组织的法律法规要求。 **0.3** 成功因素 环境管理体系的成功实施取决于最高管理者领导下的组织各层次和职能的承诺。组织可利用机遇，尤其是那些具有战略和竞争意义的机遇，预防或减轻不利的环境影响，增强有益的环境影响。通过将环境管理融入到组织的业务过程、战略方向和决策制定过程，与其他业务的优先项相协调，并将环境管理纳入组织的全面管理体系中，最高管理者就能够有效地应对其风险和机遇。成功实施本标准可使相关方确信组织已建立了有效的环境管理体系。 然而，采用本标准本身并不保证能够获得最佳环境结果。本标准的应用可因组织所处环境的不同而存在差异。两个组织可能从事类似的活动，但是可能拥有不同的合规义务、环境方针承诺，使用不同的环境技术，并有不同的环境绩效目标，然而它们均可能满足本标准的要求。 环境管理体系的详略和复杂程度将取决于组织所处的环境、其环境管理体系的范围、其合规义务，及其活动、产品和服务的性质，包括其环境因素和相关的环境影响。 **0.4** 策划**-**实施**-**检查**-**改进 模式 构成环境管理体系的方法是基于策划、实施、检查与改进（PDCA）的概念。PDCA模式为组织提供了一个循环渐进的过程，用以实现持续改进。该模式可应用于环境管理体系及其每个单独的要素。该模式可简述如下： ——策划：建立所需的环境目标和过程，以实现与组织的环境方针相一致的结果。 ——实施：实施所策划的过程。 ——检查：根据环境方针，包括其承诺、环境目标和运行准则，对过程进行监视和测量，并报告结果。 ——改进：采取措施以持续改进。 图1展示了本标准采用的结构如何融入PDCA模式，它能够帮助新的和现有的使用者理解系统方法的重要性。 图**1**： **PDCA** 与本标准结构之间的关系 **0.5** 本标准内容本标准符合ISO 对管理体系标准的要求。这些要求包括一个高阶结构，相同的核心正文， 以及具有核心定义的通用术语，目的是方便使用者实施多个ISO 管理体系标准。 本标准不包含针对其他管理体系的要求，例如：质量、职业健康安全，能源或财务管理。然而，本标准使组织能够运用共同的方法和基于风险的思维，将其环境管理体系与其他管理体系的要求进行整合。 本标准包括了评价符合性所需的要求。任何有愿望的组织均可能通过以下方式证实符合本标准： ——进行自我评价和自我声明；或——寻求组织的相关方（例如：顾客），对其符合性进行确认；或——寻求组织的外部机构对其自我声明的确认；或——寻求外部组织对其环境管理体系进行认证或注册。附录A 提供了解释性信息以防止对本标准要求的错误理解。附录B 显示了本标准现行版本与以往版本之间概括的技术对照。有关环境管理体系的实施指南包含在GB/T 24004 中。 本标准使用以下助动词： ——“应”（shall）表示要求； ——“应当”（should）表示建议； ——“可以”（may）表示允许； ——“可、可能、能够”（can）表示可能性或能力。 标记“注”的信息旨在帮助理解或使用本文件。第3章使用的“注”提供了附加信息，以补充术语信息，可能包括使用术语的相关规定。 第3章中的术语和定义按照概念的顺序进行编排，本文件最后还给出了按字母顺序的索引。 环境管理体系 要求及使用指南 **1** 范围 （本标准的适用范围）本标准规定了组织能够用于提升其环境绩效的环境管理体系要求。本标准可供寻求以系统的方式管理其环境责任的组织使用，从而为“环境支柱”的可持续性做出贡献。 本标准可帮助组织实现其环境管理体系的预期结果，这些结果将为环境、组织自身和相关方带来价值。与组织的环境方针保持一致的环境管理体系预期结果包括： ——提升环境绩效； ——履行合规义务； ——实现环境目标。 本标准适用于任何规模、类型和性质的组织，并适用于组织基于生命周期观点所确定的其活动、产品和服务中能够控制或能够施加影响的环境因素。本标准并未提出具体的环境绩效准则。 本标准能够全部或部分地用于系统地改进环境管理。然而，只有当本标准的所有要求都被包含在组织的环境管理体系中且全部得到满足，组织才能声明符合本标准。 **2** 规范性引用文件 无规范性引用文件。 **3** 术语和定义 下列术语和定义适用于本文件。 **3.1**与组织和领导作用有关的术语 **3.1.1** 管理体系组织（3.1.4）用于制订方针、目标（3.2.5）以及实现这些目标的过程（3.3.5）的相互关联或相互作用的一组要素。 注1：一个管理体系可关注一个或多个领域（例如：质量、环境、职业健康和安全、能源、财务管理）。 注2：体系要素包括组织的结构、角色和职责、策划和运行、绩效评价和改进。 注3：管理体系的范围可能包括整个组织、其特定的职能、其特定的部门、或跨组织的一个或多个职能。 **3.1.2** 环境管理体系 管理体系（3.1.1）的一部分，用来管理环境因素（3.2.2）、履行合规义务（3.2.9），并应对风险和机遇（3.2.11）。 **3.1.3** 环境方针 **environmental policy** 由最高管理者（3.1.5）就环境绩效（3.4.11）正式表述的组织（3.1.4）的意图和方向。 **3.1.4** 组织 **organization** 为实现目标（3.2.5），由职责、权限和相互关系构成自身功能的一个人或一组人。注1：组织包括但不限于个体经营者、公司、集团公司、商行、企事业单位、政府机构、合股经营的公司、公益机构、社团、或上述单位中的一部分或结合体，无论其是否具有法人资格、公营或私营。 **3.1.5** 最高管理者 **top management** 在最高层指挥并控制组织（3.1.4）的一个人或一组人。 注1：最高管理者有权在组织内部授权并提供资源。注2：若管理体系（3.1.1）的范围仅涵盖组织的一部分，则最高管理者是指那些指挥并控制组织该部分的人员。 **3.1.6** 相关方 **interested party** 能够影响决策或活动、受决策或活动影响，或感觉自身受到决策或活动影响的个人或组织。 示例：相关方可包括顾客、社区、供方、监管部门、非政府组织、投资方和员工。 注1：“感觉自身受到影响”意指组织已知晓这种感觉。 **3.2**与策划有关的术语**3.2.1** 环境 **environment** 组织（3.1.4）运行活动的外部存在，包括空气、水、土地、自然资源、植物、动物、人，以及它们之间的相互关系。注1：外部存在可能从组织内延伸到当地、区域和全球系统。注2：外部存在可能用生物多样性、生态系统、气候或其他特征来描述。 **3.2.2** 环境因素 **environmental aspect** 一个组织（3.1.4）的活动、产品和服务中与环境或能与环境（3.2.1）发生相互作用的要素。 注1：一项环境因素可能产生一种或多种环境影响（3.2.4）。重要环境因素是指具有或能够产生一种或多种重大环境影响的环境因素。注2：重要环境因素是由组织运用一个或多个准则确定的。 **3.2.3**环境状况 **environmental condition** 在某个特定时间点确定的环境（3.2.1）的状态或特征。**3.2.4**环境影响 **environmental impact** 全部或部分地由组织（3.1.4）的环境因素（3.2.2）给环境（3.2.1）造成的不利或有益的变化。**3.2.5**目标 **objective** 要实现的结果。 注1：目标可能是战略性的、战术性的或运行层面的。 注2：目标可能涉及不同的领域（例如：财务、健康与安全以及环境的目标），并能够应用于不同层面（例如：战略性的、组织层面的、项目、产品、服务和过程（3.3.5））。注3：目标可能以其他方式表达，例如：预期结果、目的、运行准则、环境目标（3.2.6）， 或使用其它意思相近的词语,例如：指标等表达。**3.2.6** 环境目标 **environmental objective** 组织（3.1.4）依据其环境方针（3.1.3）建立的目标（3.2.5）。**3.2.7**污染预防 **prevention of pollution** 为了降低有害的环境影响（3.2.4）而采用（或综合采用）过程（3.3.5）、惯例、技术、材料、产品、服务或能源以避免、减少或控制任何类型的污染物或废物的产生、排放或废弃。注：污染预防可包括源消减或消除，过程、产品或服务的更改，资源的有效利用，材料或能源替代，再利用、回收、再循环、再生或处理。 **3.2.8** 要求 **requirement** 明示的、通常隐含的或必须满足的需求或期望。注1：“通常隐含的”是指对组织（3.1.4）和相关方（3.1.6）而言是惯例或一般做法，所考虑的需求或期望是不言而喻的。注2：规定要求指眀示的要求，例如：文件化信息（3.3.2）中规定的要求。注3：法律法规要求以外的要求一经组织决定遵守即成为了义务。**3.2.9** 合规义务 [首选术语] 法律法规和其他要求 [许用术语] 组织（3.1.4）必须遵守的法律法规要求（3.2.8），以及组织必须遵守或选择遵守的其他要求。 注1：合规义务是与环境管理体系（3.1.2）相关的。注2：合规义务可能来自于强制性要求，例如：适用的法律和法规，或来自于自愿性承诺，例如：组织的和行业的标准、合同规定、操作规程、与社团或非政府组织间的协议。 **3.2.10**风险 **risk** 不确定性的影响。 注1：影响指对预期的偏离——正面的或负面的。 注2：不确定性是一种状态，是指对某一事件、其后果或其发生的可能性缺乏（包括部分缺乏）信息、理解或知识。注3：通常用潜在“事件”（见GB/T23694-2013中的4.5.1.3）和“后果”（见GB/T23694-2013中的4.6.1.3），或两者的结合来描述风险的特性。注4：风险通常以事件后果（包括环境的变化）与相关的事件发生的“可能性”（见GB/T23694-2013中的4.6.1.1）的组合来表示。 **3.2.11** 风险和机遇 **risks and opportunities** 潜在的不利影响（威胁）和潜在的有益影响（机会）。 **3.3**与支持和运行有关的术语 **3.3.1** 能力 **competence** 运用知识和技能实现预期结果的本领。 **3.3.2** 文件化信息（成文信息）（形成文件的信息）组织（3.1.4）需要控制并保持的信息，以及承载信息的载体。 注1：文件化信息可能以任何形式和承载载体存在，并可能来自任何来源。 注2：文件化信息可能涉及： ——环境管理体系（3.1.2），包括相关过程（3.3.5）； ——为组织运行而创建的信息（可能被称为文件）；——实现结果的证据（可能被称为记录）。 **3.3.3**生命周期 **life cycle** 产品（或服务）系统中前后衔接的一系列阶段，从自然界或从自然资源中获取原材料，直至最终处置。 注1：生命周期阶段包括原材料获取、设计、生产、运输和（或）交付、使用、寿命结束后处理和最终处置。 [修订自：GB/T24044中-2008中的 3.1，词语“（或服务）”已加入该定义，并增加了“注1”] **3.3.4** 外包安排外部组织（3.1.4）承担组织的部分职能或过程（3.3.5）。 注1：尽管外包的职能或过程在组织的管理体系（3.1.1）范围内，但是外部组织是处在覆盖范围之外。**3.3.5**过程 **process**将输入转化为输出的一系列相互关联或相互作用的活动。注1：过程可能形成也可能不形成文件。**3.4** 与绩效评价和改进有关的术语**3.4.1** 审核 **audit (在金融财会行业译为：审计)**获取审核证据并予以客观评价，以判定审核准则满足程度的系统的、独立的、形成文件的过程（3.5.5）。注1：内部审核由组织（3.1.4）自行实施执行或由外部其他方代表其实施。 注2：审核可以是结合审核（结合两个或多个领域）。 注3： 审核应由与被审核活动无责任关系、无偏见和无利益冲突的人员进行，以证实其独立性。注4：“审核证据”包括与审核准则相关且可验证的记录、事实陈述或其他信息；而“审核准则”则是指与审核证据进行比较时作为参照的一组方针、程序或要求（3.2.8）， GB/T19011-2013中3.3和3.2中分别对它们进行了定义。 **3.4.2** 符合 **conformity**满足要求（3.2.8）。**3.4.3** 不符合 **nonconformity** 未满足要求（3.2.8）。 注1：不符合与本标准要求及组织（3.1.4）自身规定的附加的环境管理体系（3.1.2）要求有关。**3.4.4**纠正措施 **corrective action** 为消除不符合（3.4.3）的原因并预防再次发生所采取的措施。 注1：一项不符合可能由不止一个原因导致。 **3.4.5**持续改进 **continual improvement** 不断提升绩效（3.4.10）的活动。 注1：提升绩效（3.4.11）是指运用环境管理体系（3.1.2），提升符合组织（3.1.4）的环境方针（3.1.3）的环境绩效（3.4.11）。注2：该活动不必同时发生于所有领域，也并非不能间断。 **3.4.6** 有效性 **effectiveness** 实现策划的活动和取得策划的结果的程度。 **3.4.7** 参数 **indicator** 对运行、管理或状况的条件或状态的可度量的表述。[来源：ISO 14031中的3.15]**3.4.8**监视 **monitoring** 确定体系、过程（3.3.5）或活动的状态 注1：为了确定状态，可能需要实施检查、监督或认真地观察。 **3.4.9**测量 **measurement** 确定数值的过程（3.3.5）。 **3.4.10** 绩效 **performance** 可度量的结果。 注1：绩效可能与定量或定性的发现有关。 注2：绩效可能与活动、过程（3.3.5）、产品（包括服务）、体系或组织（3.1.4）的管理有关。 **3.4.11** 环境绩效 **environmental performance** 与环境因素（3.2.2）的管理有关的绩效（3.4.10）。 注1：对于一个环境管理体系（3.1.2），可依据组织（3.1.4）的环境方针（3.1.3）、环境目标（3.2.6）或其他准则，运用参数（3.4.7）来测量结果。 **4** 组织所处的环境**4.1**理解组织及其所处的环境 组织应确定与其宗旨相关并影响其实现环境管理体系预期结果的能力的外部和内部问题。这些问题应包括受组织影响的或能够影响组织的环境状况。**4.2**理解相关方的需求和期望 组织应确定： 1. 与环境管理体系有关的相关方；
2. 这些相关方的有关需求和期望（即要求）；

 1. 这些需求和期望中哪些将成为其合规义务。

**4.3**确定环境管理体系的范围 组织应确定环境管理体系的边界和适用性，以确定其范围。 确定范围时组织应考虑： a）4.1所提及的内、外部问题； b）4.2所提及的合规义务； c）其组织单元、职能和物理边界； d）其活动、产品和服务； e）其实施控制与施加影响的权限和能力。范围一经确定，在该范围内组织的所有活动、产品和服务均需纳入环境管理体系。 范围应作为文件化信息予以保持，并可为相关方所获取。**4.4**环境管理体系 为实现组织的预期结果，包括提高其环境绩效，组织应根据本标准的要求建立、实施、保持并持续改进环境管理体系，包括所需的过程及其相互作用。 组织建立并保持环境管理体系时，应考虑在4.1和4.2获得的知识。 **5**领导作用 **5.1**领导作用与承诺 最高管理者应通过下述方面证实其在环境管理体系方面的领导作用和承诺：a）对环境管理体系的有效性负责；b）确保建立环境方针和环境目标，并确保其与组织的战略方向及所处的环境相一致； c）确保将环境管理体系要求融入组织的业务过程；d）确保可获得环境管理体系所需的资源； e）就有效环境管理的重要性和符合环境管理体系要求的重要性进行沟通； f）确保环境管理体系实现其预期结果； g）指导并支持员工对环境管理体系的有效性做出贡献； h）促进持续改进； i）支持其他相关管理人员在其职责范围内证实其领导作用。 注：本标准所提及的“业务”可广义地理解为涉及组织存在目的的那些核心活动。 **5.2**环境方针最高管理者应在确定的环境管理体系范围内建立、实施并保持环境方针，环境方针应： a）适合于组织的宗旨和所处的环境，包括其活动、产品和服务的性质、规模和环境影响；b）为制定环境目标提供框架； c）包括保护环境的承诺，其中包含污染预防及其他与组织所处环境有关的特定承诺； 注：保护环境的其他特定承诺可包括资源的可持续利用、减缓和适应气候变化、保护生物多样性和生态系统。d）包括履行其合规义务的承诺； e）包括持续改进环境管理体系以提高环境绩效的承诺。环境方针应： ——以文件化信息的形式予以保存；——在组织内得到沟通； ——可为相关方获取。 **5.3**组织的角色、职责和权限 最高管理者应确保在组织内部分配并沟通相关角色的职责和权限。最高管理者应对下列事项分配职责和权限： 1. 确保环境管理体系符合本标准的要求；

b）向最高管理者报告环境管理体系的绩效，包括环境绩效。 **6**策划 **6.1**应对风险和机遇的措施 **6.1.1**总则组织应建立、实施并保持满足6.1.1至6.1.4的要求所需的过程。 策划环境管理体系时，组织应考虑： a）4.1所提及的问题； b）4.2所提及的要求； c）其环境管理体系的范围； 并且，应确定与环境因素（见6.1.2）、合规义务（见6.1.3）、4.1和4.2中识别的其他问题和要求相关的需要应对的风险和机遇，以： ——确保环境管理体系能够实现其预期结果； ——预防或减少不期望的影响，包括外部环境状况对组织的潜在影响； ——实现持续改进。 组织应确定其环境管理体系范围内的潜在紧急情况，特别是那些可能具有环境影响的潜在紧急情况。组织应保持以下内容的文件化信息： ——需要应对的风险和机遇； ——6.1.1至6.1.4中所需的过程，其详尽程度应使人确信这些过程能按策划得到实施。 **6.1.2**环境因素 组织应在所界定的环境管理体系范围内，确定其活动、产品和服务中能够控制和能够施加影响的环境因素及其相关的环境影响。此时应考虑生命周期观点。 确定环境因素时，组织必须考虑： a）变更，包括已纳入计划的或新的开发，以及新的或修改的活动、产品和服务； b）异常状况和可合理预见的紧急情况。组织应运用所建立的准则，确定那些具有或可能具有重大环境影响的环境因素，即重要环境因素。适当时，组织应在其各层次和职能间沟通其重要环境因素。组织应保持以下内容的文件化信息： ——环境因素及相关环境影响； ——用于确定其重要环境因素的准则； ——重要环境因素。注：重要环境因素可能导致与不利环境影响（威胁）或有益环境影响（机会）相关的风险和机遇。**6.1.3**合规义务 组织应： a）确定并获取与其环境因素有关的合规义务； b）确定如何将这些合规义务应用于组织； c）在建立、实施、保持和持续改进其环境管理体系时必须考虑这些合规义务。 组织应保持其合规义务的文件化信息。 注：合规义务可能会给组织带来风险和机遇。 **6.1.4**措施的策划 组织应策划： a）采取措施管理其： 1）重要环境因素； 2）合规义务；3）6.1.1所识别的风险和机遇。b）如何：1）在其环境管理体系过程（见6.2,7,8和9.1）中或其他业务过程中融入并实施这些措施； 2）评价这些措施的有效性（见9.1）。 当策划这些措施时，组织应考虑其可选技术方案、财务、运行和经营要求。 **6.2**环境目标及其实现的策划 **6.2.1**环境目标 组织应针对其相关职能和层次建立环境目标，此时必须考虑组织的重要环境因素及相关的合规义务，并考虑其风险和机遇。 环境目标应： a）与环境方针一致； b）可度量（如可行）； c）得到监视； d）予以沟通； e）适当时予以更新。 组织应保持环境目标的文件化信息。 **6.2.2**实现环境目标的措施的策划 策划如何实现环境目标时，组织应确定： a）要做什么； b）需要什么资源； c）由谁负责； d）何时完成； e）如何评价结果，包括用于监视实现其可度量的环境目标的进程所需的参数（见9.1.1）。 组织应考虑如何能将实现环境目标的措施融入其业务过程。**7**支持 **7.1**资源 组织应确定并提供建立、实施、 保持和持续改进环境管理体系所需的资源。 **7.2**能力 组织应： a）确定在其控制下工作，对组织环境绩效和履行合规义务的能力具有影响的人员所需的能力； b）基于适当的教育、培训或经历，确保这些人员是能胜任的； c）确定与其环境因素和环境管理体系相关的培训需求； d）适用时，采取措施以获得所必需的能力，并评价所采取措施的有效性。 注：适用的措施可能包括，例如：向现有员工提供培训、指导，或重新分配工作；或聘用、雇佣能胜任的人员。 组织应保留适当的文件化信息作为能力的证据。**7.3**意识 组织应确保在其控制下工作的人员意识到： a）环境方针； b）与他们的工作相关的重要环境因素和相关的实际或潜在的环境影响； c）他们对环境管理体系有效性的贡献，包括对提高环境绩效的贡献； d）不符合环境管理体系要求，包括未履行组织合规义务的后果。 **7.4**信息交流 **7.4.1**总则 组织应建立、实施并保持与环境管理体系有关的内部与外部信息交流所需的过程，包括： a）信息交流的内容； b）信息交流的时机； c）信息交流的对象； d）信息交流的方式。 策划信息交流过程时，组织应： ——必须考虑其合规义务； ——确保所交流的环境信息与环境管理体系形成的信息一致且真实可信。 组织应对其环境管理体系相关的信息交流做出响应。适当时，组织应保留文件化信息，作为其信息交流的证据。**7.4.2**内部信息交流组织应:a）在其各职能和层次间就环境管理体系的相关信息进行内部信息交流，适当时，包括交流环境管理体系的变更； b）确保其信息交流过程能够使在其控制下工作的人员能够对持续改进做出贡献。 **7.4.3**外部信息交流 组织应按其合规义务的要求及其建立的信息交流过程，就环境管理体系的相关信息进行外部信息交流。 **7.5**文件化信息 **7.5.1**总则 组织的环境管理体系应包括： a）本标准要求的文件化信息； b）组织确定的实现环境管理体系有效性所必需的文件化信息。注：不同组织的环境管理体系文件化信息的复杂程度可能不同，取决于： ——组织的规模及其活动、过程、产品和服务的类型；——证明履行其合规义务的需要； ——过程的复杂性及其相互作用； ——在组织控制下工作的人员的能力。 **7.5.2**创建和更新 创建和更新文件化信息时，组织应确保适当的：a）标识和说明（例如：标题、日期、作者或参考文件编号）；b）形式（例如：语言文字、软件版本、图表）与载体（例如：纸质的、电子的）； c）评审和批准，以确保适宜性和充分性。 **7.5.3**文件化信息的控制环境管理体系及本标准要求的文件化信息应予以控制，以确保其： a）在需要的时间和场所均可获得并适用； b）受到充分的保护（例如：防止失密、不当使用或完整性受损）。 为了控制文件化信息，组织应进行以下适用的活动： ——分发、访问、检索和使用； ——存储和保护，包括保持易读性； ——变更的控制（例如：版本控制）； ——保留和处置。 组织应识别其确定的环境管理体系策划和运行所需的来自外部的文件化信息，适当时，应对其予以控制。 注：“访问”可能指仅允许查阅文件化信息的决定，或可能指允许并授权查阅和更改文件化信息的决定。**8**运行 **8.1**运行策划和控制 组织应建立、实施、控制并保持满足环境管理体系要求以及实施6.1和6.2所识别的措施所需的过程，通过： ——建立过程的运行准则； ——按照运行准则实施过程控制。 注：控制可包括工程控制和程序控制。控制可按层级（例如：消除、替代、管理）实施，并可单独使用或结合使用。 组织应对计划内的变更进行控制，并对非预期性变更的后果予以评审，必要时，应采取措施降低任何不利影响。组织应确保对外包过程实施控制或施加影响。应在环境管理体系内规定对这些过程实施控制或施加影响的类型与程度。 从生命周期观点出发，组织应： a）适当时，制定控制措施，确保在产品或服务的设计和开发过程中，落实其环境要求，此时应考虑生命周期的每一阶段； b）适当时，确定产品和服务采购的环境要求； c）与外部供方（包括合同方）沟通组织的相关环境要求； d）考虑提供与其产品或服务的运输或交付、使用、寿命结束后处理和最终处置相关的潜在重大环境影响的信息的需求。 组织应保持必要程度的文件化信息，以确信过程已按策划得到实施。 **8.2**应急准备和响应 组织应建立、实施并保持对6.1.1中识别的潜在紧急情况进行应急准备并做出响应所需的过程。组织应： a）通过策划措施做好响应紧急情况的准备，以预防或减轻它所带来的不利环境影响； b）对实际发生的紧急情况做出响应； c）根据紧急情况和潜在环境影响的程度，采取相适应的措施以预防或减轻紧急情况带来的后果； d）可行时，定期试验所策划的响应措施； e）定期评审并修订过程和策划的响应措施，特别是发生紧急情况后或进行试验后； f）适当时，向有关的相关方，包括在组织控制下工作的人员提供应急准备和响应相关的信息和培训。组织应保持必要的文件化信息，以确信过程能按策划得到实施。 **9**绩效评价**9.1**监视、测量、分析和评价 **9.1.1**总则组织应监视、测量、分析和评价其环境绩效。 组织应确定： a）需要监视和测量的内容： b）适用时的监视、测量、分析与评价的方法，以确保有效的结果； c）组织评价其环境绩效所依据的准则和适当的参数； d）何时应实施监视和测量； e）何时应分析和评价监视和测量结果。 适当时，组织应确保使用和维护经校准或经验证的监视和测量设备。 组织应评价其环境绩效和环境管理体系的有效性。组织应按其合规义务的要求及其建立的信息交流过程，就有关环境绩效的信息进行内部和外部信息交流。 组织应保留适当的文件化信息，作为监视、测量、分析和评价结果的证据。 **9.1.2**合规性评价 组织应建立、实施并保持评价其合规义务履行状况所需的过程。 组织应： a）确定实施合规性评价的频次； b）评价合规性，需要时采取措施； c）保持其合规情况的知识和对其合规情况的理解。 组织应保留文件化信息，作为合规性评价结果的证据。 **9.2**内部审核 **9.2.1**总则 组织应按计划的时间间隔实施内部审核，以提供下列关于环境管理体系的信息： a）是否符合： 1）组织自身环境管理体系的要求； 2）本标准的要求； b）是否得到了有效的实施和保持。 **9.2.2** 内部审核方案 组织应建立、实施并保持一个或多个内部审核方案，包括实施审核的频次、方法、职责、策划要求和内部审核报告。 建立内部审核方案时，组织必须考虑相关过程的环境重要性、影响组织的变化以及以往审核的结果。 组织应： a）规定每次审核的准则和范围； b）选择审核员并实施审核，确保审核过程的客观性与公正性； c）确保向相关管理者报告审核结果。 组织应保留文件化信息，作为审核方案实施和审核结果的证据。 **9.3**管理评审最高管理者应按计划的时间间隔对组织的环境管理体系进行评审，以确保其持续的适宜性、充分性和有效性。 管理评审应包括对下列事项的考虑： a）以往管理评审所采取措施的状况； b）以下方面的变化：1）与环境管理体系相关的内、外部问题； 2）相关方的需求和期望，包括合规义务； 3）其重要环境因素； 4）风险和机遇。 c）环境目标的实现程度； d）组织环境绩效方面的信息，包括以下方面的趋势： 1）不符合和纠正措施； 2）监视和测量的结果； 3）其合规义务的履行情况； 4）审核结果。 e）资源的充分性； f）来自相关方的有关信息交流，包括抱怨； g）持续改进的机会。 管理评审的输出应包括： ——对环境管理体系的持续适宜性、充分性和有效性的结论； ——与持续改进机会相关的决策； ——与环境管理体系变更的任何需求相关的决策，包括资源； ——如需要，环境目标未实现时采取的措施； ——如需要，改进环境管理体系与其他业务过程融合的机会； ——任何与组织战略方向相关的结论。 组织应保留文件化信息，作为管理评审结果的证据。 **10** 改进**10.1** 总则组织应确定改进的机会（见9.1,9.2和9.3），并实施必要的措施，以实现其环境管理体系的预期结果。**10.2**不符合和纠正措施 发生不符合时，组织应： a）对不符合做出响应，适用时： 1）采取措施控制并纠正不符合； 2）处理后果，包括减轻不利的环境影响； b）通过以下方式评价消除不符合原因的措施需求，以防止不符合再次发生或在其他地方发生： 1）评审不符合； 2）确定不符合的原因； 3）确定是否存在或是否可能发生类似的不符合。c）实施任何所需的措施； d）评审所采取的任何纠正措施的有效性； e）必要时，对环境管理体系进行变更。 纠正措施应与所发生的不符合造成影响（包括环境影响）的重要程度相适应。 组织应保留文件化信息作为下列事项的证据： ——不符合的性质和所采取的任何后续措施； ——任何纠正措施的结果。 **10.3**持续改进 组织应持续改进环境管理体系的适宜性、充分性与有效性，以提升环境绩效。附录**A** （资料性附录） 本标准使用指南 **A.1**总则 本附录所给出的附加信息旨在防止对本标准所包含的要求的错误理解。这些信息的阐述与标准要求保持一致，不拟增加、减少或以任何方式修改本标准的要求。 本标准所包含的要求需要从系统或整体的角度进行考虑。使用者不应当脱离其他条款孤立地阅读本标准的特定句子或条款。某些条款中的要求与其他条款中的要求之间存在着相互联系。例如：组织需要理解其环境方针中的承诺与其他条款规定的要求之间的联系。 对变更的管理是组织保持环境管理体系，以确保能够持续实现其环境管理体系预期结果的一个重要组成部分。本标准诸多要求中均提出对变更的管理，包括： ——保持环境管理体系（见4.4）； ——环境因素（见6.1.2）； ——内部信息交流（见7.4.2）； ——运行控制（见8.1）； ——内部审核方案（见9.2.2）；以及 ——管理评审（见9.3）。 作为变更管理的一部分，组织应当处理计划内的和计划外的变更，以确保这些变更的非预期结果不对环境管理体系的预期结果产生负面影响。变更的示例包括： ——计划的对产品、过程、运行、设备或设施的变更； ——员工或外部供方（包括合同方）的变更； ——与环境因素、环境影响和相关技术有关的新信息；——合规义务的变更。 **A.2**结构和术语的说明 为改进与其他管理体系标准之间的一致性，本标准的条款结构和一些术语已做出了变更。然而，本标准并未要求必须将其条款结构或术语应用于组织环境管理体系文件，也未要求必须以本标准使用的术语替代组织使用的术语。组织可选择使用适合其业务的术语，例如：“记录”、“文件”或“规程”，而不一定用“文件化信息”。**A.3** 概念的说明 除了条款3给出的术语和定义外，以下还对所选取的概念提供了说明，以防止错误理解： ——本标准中，“any（任何）”一词的使用意指选用或选择。 ——“appropriate（适当的）”与“applicable（适用的）”不得互换。“适当的”意指适合于或适于……的，并意味着某种程度的自由；而“适用的”意指相关的或有可能应用的，且意味着如果能够做到，就须要做。 ——“consider（考虑）”一词意指有必要考虑这一话题，但可拒绝考虑；而“take into account（必须考虑）”意指有必要考虑这一话题，但不能拒绝考虑。 ——“continual（持续）”指发生在一段时期内的持续，但可能有间断；而“continuous（连续）”指不间断的持续，因此应当使用“持续”来描述改进。 ——本标准中，“effect（影响）”一词用来描述组织变化的结果；“environmental impact（环境影响）”特指对环境造成变化的结果。 ——“ensure（确保）”一词意指职责可以委派，但责任不能委派。 ——本标准使用了术语“interested party（相关方）”，“stakeholder（利益相关方）”是其同义词，代表了相同概念。 本标准使用了一些新的术语。以下对其进行简单解释，有助于新的使用者和本标准前版标准的使用者理解。 ——“compliance obligations（合规义务）”短语替代了前版标准的短语“legal requirements and other requirements to which the organization subscribes（法律法规要求和组织应遵守的其他要求）”，这一新短语的含义与前版标准无区别。 ——“documented information（文件化信息）”替代了前版标准中的名词“documentation（文件）”、“documents（文档）”和“records（记录）”。为区分“文件化信息”这一通用术语的含义，本标准现使用短语“保留（retain）文件信息作为……的证据”来表示记录，用短语“maintain（保持）文件化信息”来表示记录以外的文件。短语“作为….的证据”并非是满足法律证据的要求，而只是表明需要保留的客观证据。 ——短语“external provider（外部供方）”意指提供产品或服务的外部供方组织（包括合同方）。——将“identify（识别、确定）”改为“determine（确定）”旨在与标准化的管理体系术语保持一致。“确定”一词意指获得认知的探索过程，其含义与前版标准无区别。 ——短语“预期结果（intended outcome）”指组织通过实施其环境管理体系想要实现的结果。最低限度的预期结果包括提升环境绩效、履行合规义务和实现环境目标。组织可针对其环境管理体系设定附加的预期结果，例如与其保护环境的承诺相一致，组织可建立一个致力于实现可持续发展的预期结果。 ——短语“person(s) doing work under its control（在其控制下工作的人员）”包括为组织工作的人员和那些代表组织工作并承担相应职责的人员（例如：合同方）。以此替代前版标准中的短语“persons working for it or on its behalf，persons working for or on behalf of the organization（为组织或代表组织工作的人员）”，这一新短语的含义与前版标准无区别。 ——前版标准中使用的概念“target（指标）”已包含在术语“environmental objective（环境目标）”中。 **A.4**组织所处的环境 **A.4.1**理解组织及其所处的环境 4.1旨在针对可能对组织管理其环境职责的方式产生影响（正面的或负面的）的重要问题提供一个高层次的、概念性的理解。这些问题是组织的重要议题，也是需要探讨和讨论的问题，或是对组织实现其设定的环境管理体系预期结果的能力造成影响的变化着的情况。 可能与组织所处的环境相关的内、外部问题示例如下： a）与气候、空气质量、水质量、土地使用、现存污染、自然资源的可获得性、生物多样性等相关的、可能影响组织目的或受组织环境因素影响的环境状况； b）外部的文化、社会、政治、法律、监管、财务、技术、经济、自然以及竞争环境，无论是国际的、国内的、区域的和地方的； c）组织内部特征或条件，例如：其活动、产品和服务、战略方向、文化与能力（即：人员、知识、过程、体系）。理解组织所处的环境被其用于建立、实施、保持并持续改进其环境管理体系（见4.4）。4.1所确定的内外部问题可能给组织或环境管理体系带来风险和机遇（见6.1.1至6.1.3）。组织从中确定那些需要应对和管理的风险和机遇（见6.1.4，6.2，7，8和9.1）。 **A.4.2**理解相关方的需求和期望 本标准希望组织对那些已确定与其有关的内外部相关方所表达的需求和期望有一个总体的（即高层次非细节性的）理解。组织在确定这些需求和期望中哪些他们必须遵守或选择遵守时，即合规义务（见6.1.1）时，需考虑其所获得的知识。 当某相关方感觉自身受到与环境绩效有关的组织的决策或活动的影响时，则组织应考虑该相关方向其告知或透露的有关需求和期望。 相关方的要求不一定是组织必需满足的要求。一些相关方的要求体现了强制性的需求和期望，因为这些需求和期望已被纳入法律、法规、规章、政府或甚至法庭判决的许可和授权中。组织可决定是否自愿接受或采纳相关方的其他需求和期望（例如：纳入合同关系或签署自愿性协议）。组织一旦采纳了这些需求和期望，它们就成为了组织的要求，即成为合规义务，并在策划环境管理体系（见4.4）时必须得到考虑。对组织合规义务更详细的分析见6.1.3。 **A.4.3** 确定环境管理体系的范围 环境管理体系的范围旨在明确应用环境管理体系的、物理的和组织的边界，尤其是如果组织属于某大型组织的一部分时.组织可自主灵活地界定其边界。可选择在整个组织内实施本标准，或只在组织的特定部分实施，只要该部分的最高管理者有权力建立环境管理体系。 设定范围时，环境管理体系的可信性取决于组织边界的选取。组织应运用生命周期观点考虑其对活动、产品和服务能够实施控制或施加影响的程度。范围的设定不应当用来排除具有或可能具有重要环境因素的活动、产品、服务或设施，或规避其合规义务。范围是对包含在其环境管理体系边界内组织运行的、真实并具代表性的声明，且不应当对相关方造成误导。 一旦组织宣称符合本标准，则要求组织对范围的声明可为相关方获取。 **A.4.4**环境管理体系 组织有权力和责任决定如何满足本标准要求，包括以下事项的详略程度： a）建立一个或多个过程，以确信它（们）按策划得到控制和实施，并实现期望的结果； b）将环境管理体系要求融入其各项业务过程中，例如：设计和开发、采购、人力资源、营销和市场等； c）将与组织所处的环境（见4.1）和相关方要求（见4.2）有关的问题纳入其环境管理体系。 如果在组织内的一个或多个特定部分实施本标准，则也可采用组织其他部分建立的方针、过程和文件化信息来满足本标准的要求，只要它们适用于这个（些）特定部分。 关于将保持环境管理体系作为变更管理的一部分的信息，见A.1。 **A.5** 领导作用 **A.5.1** 领导作用和承诺 为了证实领导作用和承诺，最高管理者负有环境管理体系有关的特定职责，应当亲自参与或进行指导。最高管理者可向他人委派这些行动的职责，但仍有责任确保这些行动得到实施。 **A.5.2**环境方针 环境方针是声明承诺的一系列原则，最高管理者在这些承诺中概述了组织支持并提升其环境绩效的意图。环境方针使组织能够制定其环境目标（见6.2），采取措施实现环境管理体系的预期结果，并实现持续改进（见10）。 本标准规定了环境方针的三项基本承诺： a）保护环境; b）履行组织的合规义务； c）持续改进环境管理体系以提升环境绩效。 这些承诺体现在组织为满足本标准特定要求所建立的过程中，以确保一个坚实、可信和可靠的环境管理体系。 保护环境的承诺不仅是通过污染预防防止不利的环境影响，还要保护自然环境免遭因组织的活动、产品和服务而导致的危害与退化。组织追求的特定承诺应当与其所处的环境，包括当地的或地区的环境状况相关。这些承诺可能提及，例如：水质量、再循环或空气质量的问题，并可能包括与减缓和适应气候变化、保护生物多样性与生态系统，以及环境修复相关的承诺。 所有承诺均很重要，某些相关方特别关注组织履行其合规义务的承诺，尤其是满足适用法律法规要求的承诺。本标准规定了一系列与该承诺相关的相互关联的要求，包括下列需求： ——确定合规义务； ——确保按照这些合规义务实施运行； ——评价合规义务的履行情况； ——纠正不符合。 **A.5.3**组织的角色、职责和权限 参与组织环境管理体系的人员应当对其在遵守本标准要求和实现预期结果方面的角色、职责和权限有清晰的理解。5.3识别的特定角色和职责可分派给某一个人，有时被称为“管理者代表”，也可由几个人分担，或分派给最高管理层的某位成员。**A.6**策划**A.6.1**应对风险和机遇的措施 **A.6.1.1**总则 6.1.1建立过程的总体目的在于确保组织能够实现其环境管理体系的预期结果，预防或减少非预期影响，并实现持续改进。组织可通过确定其需要应对的风险和机遇，策划措施进行处理来确保实现上述目的。风险和机遇可能与环境因素、合规义务，其他问题，或相关方的其他需求和期望有关。 环境因素（见A.6.1.2）可能产生与不利环境影响、有益环境影响以及对组织的其他影响有关的风险和机遇。与环境因素有关的风险和机遇的确定，可作为重要性评价的一部分，也可单独确定。 合规义务（见A.6.1.3）可能产生风险和机遇，例如：未履行合规义务可损害组织的声誉或导致诉讼；或更多地履行合规义务，则能够提升组织的声誉。 组织也可能存在与其他问题有关的风险和机遇，包括环境状况，或相关方的需求和期望，这些都可能影响组织实现其环境管理体系预期结果的能力。例如： a）由于员工文化或语言的障碍，未能理解当地的工作程序而导致的环境泄漏； b）因气候变化而导致的洪涝灾害的增加，可影响组织的经营场地；c）由于经济约束，导致缺乏可获得的资源来保持一个有效的环境管理体系；d）通过政府财政资助引进新技术，可能改善空气质量； e）旱季缺水可能影响组织运行其排放控制设备的能力。 紧急情况是意外的或不期望的事件，需要紧急运用特殊的能力、资源或过程以预防或减轻其实际或潜在的后果。紧急情况可能导致不利环境影响或对组织造成其他影响。组织在确定潜在的紧急情况（例如：火灾、化学品溢出、恶劣天气）时，应当考虑以下内容： ——现场的危险物品（例如：易燃液体、储罐、压缩气体）的性质； ——紧急情况最有可能的类型和规模； ——附近设施（例如：工厂、道路、铁路线）发生紧急情况的可能性。 尽管需确定和应对风险和机遇，但并不要求进行正式的风险管理或文件化的风险管理过程。组织可自行选择确定风险和机遇的方法。方法可涉及简单的定性过程或完整的定量评价，这取决于组织运行所处的环境。 识别的风险和机遇（见6.1.1-6.1.3）是策划措施（见6.1.4）和建立环境目标（见6.2）的输入。 **A.6.1.2**环境因素 组织确定其环境因素和相关环境影响，进而确定那些需要通过其环境管理体系进行管理的重要环境因素。 全部地或部分地由环境因素给环境造成的任何不利或有益的变化称为环境影响。环境影响可能发生在地方、区域或是全球范围，且可能是直接的、间接的或经自然累积的影响。环境因素和环境影响之间是因果关系。 确定环境因素时，组织要考虑生命周期观点。但并不要求进行详细的生命周期评价，只需认真考虑可被组织控制或影响的生命周期阶段就足够了。产品或服务的典型生命周期阶段包括原材料获取、设计、生产、运输和（或）交付、使用、寿命结束后处理和最终处置。适用的生命周期阶段将根据活动、产品和服务的不同而不同。 组织必须确定其环境管理体系范围内的环境因素。必须考虑与其现在的及过去有关的活动、产品和服务，计划的或新的开发，新的或修改的活动、产品和服务相关的输入和输出（包括预期的和非预期的）。运用的方法应当考虑正常的和异常的运行状况、关闭与启动状态，以及6.1.1中识别的可合理预见的紧急情况。组织应当注意以前曾发生过的紧急情况。关于将环境因素作为变更管理的一部分的信息，见A.1。 组织不必单个考虑每个产品、组件或原材料以确定和评价其环境因素。当这些活动、产品和服务具有相同特性时，可对其进行分组或分类。 确定其环境因素时，组织可能考虑下列事项：a）向大气的排放;b）向水体的排放；c）向土地的排放；d）原材料和自然资源的使用；e）能源使用；f）能量释放，例如：热能、辐射、振动（噪音）和光能； g）废物和（或）副产品的产生； h）空间利用。除组织能够直接控制的环境因素外，组织还应确定是否存在其能够施加影响的环境因素。这些环境因素可能与组织使用的由其他方提供的产品和服务有关，也可能与组织向其他方提供的产品和服务有关，包括与外包过程有关的产品和服务。对于组织向其他方提供的产品和服务，组织可能仅对产品和服务的使用与寿命结束后处理具有有限的影响。然而，在任何情况下，均由组织确定其能够实施控制的程度，其能够施加影响的环境因素，以及其选择施加这种影响的程度。 应当考虑与组织活动、产品和服务相关的环境因素，例如： ——其设施、过程、产品和服务的设计和开发； ——原材料的获取，包括开采；——运行或制造过程，包括仓储；——设施、组织的资产和基础设施的运行和维护；——外部供方的环境绩效和实践；——产品运输和服务交付，包括包装；——产品存储、使用和寿命结束后的处理；——废物管理，包括再利用、翻新、再循环和处置。确定重要环境因素的方法不是唯一的。但所使用的方法与准则应当提供一致的结果。组织应设立确定其重要环境因素的准则。环境准则是评价环境因素基本的和最低限度的准则。准则可能与环境因素有关，例如：类型、规模、频次等，可能与环境影响有关，例如：规模、严重程度、持续时间、暴露时间等，也可运用其他准则。当仅考虑某项环境准则时，一项环境因素可能不是重要环境因素，但当考虑了其他准则时，它或许可能达到或超过了确定重要性的阈值。这些其他准则可能包括组织的问题，例如：法律要求或相关方的关注。这些其他准则不应被用来使基于其环境影响的重要环境因素降低等级。一项重要环境因素可能导致一种或多种重大环境影响，并可能因此导致为确保组织能够实现其环境管理体系的预期结果而需要应对的风险和机遇。**A.6.1.3**合规义务 组织需详细确定其在4.2中识别的适用于其环境因素的合规义务，并确定这些合规义务如何应用于组织。合规义务包括组织须遵守的法律法规要求，及组织须遵守的或选择遵守的其他要求。 如果适用，与组织环境因素相关的强制性法律法规要求可能包括： a）政府机构或其他相关权力机构的要求； b）国际的、国家的和地方的法律法规； c）许可、执照或其他形式授权中规定的要求； d）监管机构颁布的法令、条例或指南； e）法院或行政的裁决； 合规义务也包括组织须采纳或选择采纳的，与其环境管理体系有关的其他相关方的要求。如果适用，这些要求可能包括： ——与社会团体或非政府组织达成的协议； ——与公共机关或客户达成的协议； ——组织的要求； ——自愿性原则或业务守则； ——自愿性标志或环境承诺； ——与组织签订的合同所约定的义务； ——相关的组织标准或行业标准。 **A.6.1.4**措施的策划 组织在高层面上策划环境管理体系中须采取的措施，以管理其重要环境因素、合规义务，以及6.1.1识别的，为实现其环境管理体系的预期结果而被组织作为优先项考虑的风险和机遇。 策划的措施可包括建立环境目标（见6.2），或以独立或结合的方式融入环境管理体系的其他过程。一些措施还可以通过其他管理体系提出，例如：与职业健康安全或业务连续性有关的管理体系；或通过与风险、财务或人力资源管理有关的其他业务过程提出。当考虑其技术选项时，组织应当考虑在经济可行、成本效益高和适用的前提下，采用最佳可行技术。但这并不意味着组织必须使用环境成本核算的方法学。**A.6.2**环境目标及其实现的策划 最高管理者可从战略层面、战术层面或运行层面来建立环境目标。战略层面包括组织的最高层次，其目标能够适用于整个组织。战术和运行层面可能包括针对组织内特定单元或职能的环境目标，应当与组织的战略方向相一致。组织应当与在其控制下工作的、具备影响实现环境目标的能力的人员沟通环境目标。 “必须考虑重要环境因素”的要求并不意味着必须针对每项重要环境因素制定一个环境目标，而是制定环境目标时应优先考虑这些重要环境因素。“与环境方针保持一致”指环境目标是与最高管理者在环境方针中做出的承诺保持总体协调一致，包括持续改进的承诺。 选择参数来评价可度量的环境目标的实现情况。“可度量”指可能使用与规定尺度有关的定性的或定量的方法，来确定是否实现了环境目标。“如可行”表示某些情况下可能无法度量环境目标。但重要的是组织需能够判定环境目标是否得以实现。关于环境参数的附加信息见GB/T24031。 **A.7**支持 **A.7.1**资源 资源是环境管理体系有效运行和改进，以及提升环境绩效所必需的。最高管理者应当确保那些负有环境管理职责的人员得到必需的资源支持。内部资源可由外部供方补充。 资源可能包括人力资源、自然资源、基础设施、技术和财务资源。例如：人力资源包括专业技能和知识；基础设施资源包括组织的建筑、设备、地下储罐和排水系统等。 **A.7.2**能力 本标准的能力要求适用于那些可能影响组织环境绩效的、在组织控制下工作的人员，包括： a）其工作可能造成重大环境影响的人员； b）被分派了环境管理体系职责的人员，包括涉及以下工作的人员： 1）确定并评价环境影响或合规义务； 2）为实现环境目标做出贡献； 3）对紧急情况做出响应； 4）实施内部审核； 5）实施合规性评价。 **A.7.3**意识 对环境方针的认知不应当理解为需要熟记承诺或在组织控制下工作的人员保存有文件化的环境方针的文本。而是这些人员应当意识到环境方针的存在、环境方针的目的以及他们在实现承诺中所起的作用，包括他们的工作如何能影响组织履行其合规义务的能力。**A.7.4**信息交流 信息交流使组织能够提供并获得与其环境管理体系相关的信息，包括与其重要环境因素、环境绩效、合规义务和持续改进建议相关的信息。信息交流是一个双向的过程，包括在组织的内部和外部。组织在建立其信息交流过程时，应当考虑内部组织结构，以确保与最适当的职能和层次进行信息交流。可能采用一种方式就足以满足多个不同相关方的需求，而对于个别相关方的特殊需求，则可能需要多重信息交流方式。组织所接收的信息可能包括相关方对与组织环境因素管理有关的特定信息的需求，或可能包含对组织实施管理的方式的总体印象或看法。这些印象和看法可能是正面或是负面的。若是负面看法（例如：投诉），则重要的是组织要及时给出明确的回复。对这些投诉进行事后分析能为寻求环境管理体系的改进机会提供有价值的信息。 信息交流应当具有下列特性： a）透明性，即组织对其获得报告内容的方式是公开的； b）适当性，以使信息满足相关方的需求，并促使其参与； c）真实性，不会使那些相信所报告信息的人员产生误解； d）事实性、准确性与可信性； e）不排除相关信息； f）使相关方可理解。 关于将信息交流作为变更管理的一部分的信息，见A.1。关于信息交流的附加信息见GB/T 24063。 **A.7.5**文件化信息 组织应当创建并保持充分的文件化信息，以确保实施适宜、充分和有效的环境管理体系。首要关注点应当放在环境管理体系的实施和环境绩效，而非复杂的文件化信息控制系统。 除了本标准特定条款所要求的文件化信息外，组织可针对透明性、责任、连续性、一致性、培训，或易于审核等目的，选择创建附加的文件化信息。 可使用最初并非以环境管理体系的目的而创建的文件化信息。环境管理体系的文件化信息可与组织实施的其他管理体系信息相整合。文件化信息不一定以手册的形式呈现。 **A.8**运行 **A.8.1**运行策划和控制 运行控制的类型和程度取决于运行的性质、风险和机遇、重要环境因素及合规义务。组织可灵活选择确保过程有效和实现预期结果所需的运行控制方法的类型，可以是单一或组合方式。此类方法可能包括： a）设计一个或多个防止错误并确保一致性结果的过程； b）运用技术来控制一个或多个过程并预防负面结果（即工程控制）； c）启用能胜任的人员，确保获得预期结果； d）按规定的方式实施一个或多个过程； e）监视或测量一个或多个过程，以检查结果； f）确定所需使用的文件化信息及其数量。 组织在其自身业务过程（例如：采购过程）中决定所需的控制程度，对外包过程或产品和服务的供方进行控制或施加影响，其决定应当基于下列因素： ——知识、能力和资源，包括： ——外部供方满足组织环境管理体系要求的能力； ——组织确定适当控制或评价控制充分性的技术能力。——产品和服务对组织实现其环境管理体系预期结果的能力所具有的重要性和潜在影响；——对过程控制进行共享的程度； ——通过采用其常规的采购过程，实现必要的控制的能力； ——可获得的改进机会。 当一个过程被外包或当产品和服务由外部供方提供时，组织实施控制或施加影响的能力可能发生由直接控制向有限控制或不能影响的变化。某些情况下，发生在组织现场的外包过程可能直接受控；而另一些情况下，组织影响外包过程或外部供方的能力可能是有限的。在确定与外部供方（包括合同方）有关的运行控制的程度和类型时，组织可考虑以下一个或多个因素，例如： ——环境因素和相关的环境影响； ——与组织制造产品或提供服务相关的风险和机遇； ——组织的合规义务； 关于将运行控制作为变更管理的一部分的信息，见A.1。关于生命周期观点的信息见A.6.1.2。 外包过程是满足下述所有条件的一种过程： ——在环境管理体系的范围之内； ——对于组织的运行是必需的； ——对环境管理体系实现其预期结果是必需的； ——组织保有符合要求的责任； ——组织与外部供方存在一定关系，此时，相关方会认为该过程是由组织实施的。 环境要求是组织为其相关方（例如：采购、顾客、外部供方等内部职能）建立并与其进行沟通的，与组织环境有关的需求和期望。 组织的某些重大环境影响可能发生在产品或服务的运输、交付、使用、寿命结束后处理或最终处置阶段。通过提供信息，组织有可能能够预防或减轻这些生命周期阶段的不利环境影响。**A.8.2**应急准备和响应 以一种适合于组织特别需求的方式，对紧急情况做出准备和响应是每个组织的责任。关于确定紧急情况的信息见A.6.1.1。 策划应急准备和响应过程时，组织应当考虑： a）响应紧急情况的最适当的方法； b）内部和外部信息交流过程； c）预防或减轻环境影响所需的措施； d）针对不同类型紧急情况所采取的减轻和响应措施； e）紧急情况后评估的需要，以确定并实施纠正措施； f）定期试验策划的应急响应措施； g）对应急响应人员进行培训； h）关键人员和救助机构名录，包括详细的联系方式（例如：消防部门、泄漏清理服务部门）； i）疏散路线和集合地点； j）从邻近组织获得相互援助的可能性。 **A.9** 绩效评价 **A.9.1**监视、测量、分析和评价 **A.9.1.1**总则 当确定应当监视和测量的内容时，除了环境目标的进展外，组织必须考虑其重要环境因素、合规义务和运行控制。组织应当在其环境管理体系中规定监视、测量、分析和评价所使用的方法，以确保： a）监视和测量的时机与分析和评价结果的需求相协调； b）监视和测量的结果是可靠的、可重现的和可追溯的； c）分析和评价是可靠的和可重现的，并使组织能够报告趋势； 应当向具有职责和权限的人员报告对环境绩效分析和评价的结果，以便启动适当的措施。 关于环境绩效评价的附加信息见GB/T 24031。**A.9.1.2** 合规性评价 合规性评价的频次和时机可根据要求的重要性、运行条件的变化、合规义务的变化，以及组织以往绩效的变化而变化。组织可使用多种方法保持对其合规状态的知识和理解，然而，所有合规义务均需定期予以评价。如果合规性评价结果表明未满足法律法规要求，组织则需要确定并采取必要措施以实现合规，这可能需要与监管部门进行沟通，并就采取一系列措施满足其法律法规要求签订协议。协议一经签订，则成为合规义务。 若不合规项已通过环境管理体系过程予以识别并纠正，则不合规项不必升级为不符合。与合规性有关的不符合，即使尚未导致实际的针对法律法规要求的不合规项，也需要予以纠正。**A.9.2**内部审核 只要可行，审核员均应当独立于被审核的活动，并应当在任何情况下均以不带偏见、不带利益冲突的方式进行审核。 内部审核所识别的不符合应采取适当的纠正措施。 考虑以往的审核结果时，组织应当考虑以下内容： a）以往识别的不符合及所采取措施的有效性； b）内外部审核的结果。 关于制定内部审核方案、实施环境管理体系审核并评价审核人员能力的附加信息见GB /T19011。关于将内审方案作为变更管理的一部分的信息，见A.1。 **A.9.3**管理评审 管理评审应当是高层次的，不必对详尽信息进行彻底评审。管理评审的主题不需要一次全部评审完，评审可在一段时期内开展，并可成为定期安排的管理活动的一部分，例如：董事会议或运营会议。它不需要成为一项单独的活动。由最高管理者评审来自相关方的有关抱怨，以确定改进的机会。关于将管理评审作为变更管理的一部分的信息，见A.1。 “适宜性”指环境管理体系如何适合于组织、其运行、文化及业务系统。“充分性”指组织的环境管理体系是否符合本标准要求，并予以恰当地实施。“有效性”指组织的环境管理体系是否正在实现预期的结果。 **A.10** 改进 **A.10.1**总则 采取措施进行改进时，组织应当考虑来自环境绩效分析和评价、合规性评价、内部审核和管理评审的结果。改进的示例包括纠正措施、持续改进、突破性变更、革新和重组。 **A.10.2**不符合和纠正措施 环境管理体系的主要用途之一是作为预防性的工具。预防措施的概念目前包含在4.1（即理解组织及其所处的环境）和6.1（即应对风险和机遇的措施）中。 **A.10.3**持续改进 支持持续改进的措施的等级、程度与时间表由组织确定。通过整体运用环境管理体系或改进其一个或多个要素，可提升环境绩效。附录**B** （资料性附录） **GB/T24001-2015**与**GB/T24001-2004**之间的对应情况 （略）参考文献 [1] GB/T24004 环境管理体系 原则、体系和支撑技术通用指南 [2]ISO14006（环境管理体系 整合生态设计指南） [3] GB/T24031 环境管理 环境绩效评价 指南 [4]GB/T 24044 环境管理 生命周期评价 要求和指南 [5] GB/T24063 环境管理 环境信息交流 指南和示例 [6] GB/T19011 管理体系审核指南 [7]ISO 31000（风险管理 原则和指南） [8] GB/T23331 能源管理体系 要求 [9] ISO Guide 73（风险管理 术语） |