AMERICAN NATIONAL STANDARD

ASQ/ANSI E4:2014

Quality management systems for environmental information and technology programs— Requirements with guidance for use

Prepared as an American National Standard by:
ASQ Energy and Environmental Division and ASQ Standards Committee

ASQ
The Global Voice of Quality™

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An American National Standard approved February 4, 2014

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Foreword

The American National Standards Institute (ANSI) is the national standards-setting body for the United States of America and is the U.S. member body to the International Organization for Standardization (ISO). In carrying out the development of American National Standards, ANSI often delegates the preparation of standards to accredited technical organizations. The American Society for Quality (ASQ) is recognized and authorized by ANSI for the preparation of quality-related standards.

The ASQ Mission is to facilitate continuous improvement and increase customer satisfaction by identifying, communicating, and promoting the use of quality principles, concepts, and technologies; and thereby be recognized throughout the world as the leading authority on, and champion for, quality.

This 3rd edition of ASQ/ANSI E4 was prepared by the Energy and Environmental Division of ASQ under the auspices of the ASQ Standards Committee.

This Standard replaces ANSI/ASQ E4-2004: Quality systems for environmental data and technology programs-Requirements with guidance for use, in its entirety. Annex A, Annex B, and Annex C of this American National Standard are for information only.

The Energy and Environmental Division thanks the members of the ASQ Standards Committee for their contributions to the consensus process by which this Standard was approved.

Suggestions for improvement of this Standard are welcome. They should be sent to the Standards Administrator, ASQ, P.O. Box 3005, Milwaukee, WI 53201-3005.

INTRODUCTION

0.1 General

This American National Standard presents requirements for a Quality Management Systems (QMS) for environmental programs.

A national consensus standard for a QMS for programs involving environmental information and technology has been shown to be a valuable instrument to verify and help to improve the suitability and effectiveness of quality control (QC) and quality assurance (QA) practices applied to environmental programs. This American National Standard is intended to provide a minimum set of requirements to enable organizations to plan, implement, and assess the suitability and effectiveness of a QMS for environmental programs involving environmental information and technology.

Recognizing the diversity of scope of environmental programs and the breadth of the field of application, this Standard also provides non-mandatory guidelines in an annex to enable users to extend quality beyond the minimum requirements.

0.2 Compatibility with Other Management Systems

This Standard incorporates relevant criteria from other management systems standards and guidelines, including the ISO 9000 series and ISO Directives on management systems standards, and presents them from an environmental information and technology perspective. Efforts have been made to align this Standard with ISO 9001:2015, Quality management systems – Requirements. There is some deliberate duplication in the Standard in order to preserve the logical flow of the requirements and to provide a self-contained document that would not require references to other standards.

This Standard defines and describes quality control and quality assurance activities for environmental programs involving information generation and use, and technology design, development, and operation. This Standard does not provide specifications or guidelines on environmental management systems rather it may be used to support the quality aspects of environmental management systems and applications. Environmental management is outside the scope and intent of this standard and is addressed in ISO 14001 (Current Edition), Environmental management systems - Specification with guidance for use. This Standard may be used by organizations implementing an environmental management system to provide QC and QA support to the activities supporting the environmental management system.

To the extent practicable, this American National Standard conforms to terminology and definitions adopted by ISO for management systems in order to facilitate the understanding and usefulness of the clauses.

0.3 General Design of the Standard

This Standard is modular in design. Clauses 1, 2, 3, and 4 pertain to all applications of the Standard. Clause 4 describes the quality management elements that are common to an organization's environmental programs regardless of their technical scope. Clauses 5 and 6 contain the QMS elements applicable to technical areas on environmental information and environmental technology, respectively. The specific applicability of these clauses to individual environmental programs is left to the user to determine.

Clause 3, Terms and Definitions, contains the terminology needed for QMS applied to environmental programs. While efforts have been made to conform to the common terminology now being required for ISO management systems standards (MSS), this terminology does not always fit conventional use and understanding across environmental programs. In situations where the common terminology does not convey the desired intent, this Standard will retain the traditional terminology.

Clause 4, Management and Organization, describes the quality management elements needed for taking into account the way the organization implements and maintains a QMS for environmental programs. This Clause defines common quality management practices and responsibilities that must be addressed in the QMS to enable project-specific operations to be planned, implemented, and assessed. Clause 4 is used in conjunction with the other parts of the standard to formulate a complete QMS that is consistent with the scope of the organization's environmental programs.

Clause 5, Environmental Information, provides the additional QMS elements needed to plan, implement, and assess environmental information operations, including the collection, handling, analysis, and evaluation of this information. Clause 5 is used in conjunction with the elements in Clause 4 to provide for a complete QMS for collecting, producing, and evaluating environmental information. Such information may include chemical, biological, toxicological, ecological, radiological, and physical parameters. This information may be obtained directly from the environment or from systems representing environmental conditions, such as laboratories, test chambers, or models. The activities described in Clause 5 have traditionally been associated with environmental monitoring. The QMS requirements in Clause 5 also apply to the collection of environmental information that is used directly to design, construct, or operate environmental technology.

Clause 6, Environmental Technology, provides the additional QMS elements needed to plan, implement, and assess the design, construction, and operation of such technologies, and to enable the intended performance of the technologies. In addition, Clause 6 provides the additional QMS elements needed to duplicate environmental conditions for test purposes, remediate environmental contamination, prevent or remove pollutants from process discharges, or dispose of or store hazardous, radioactive, and/or mixed wastes. Environmental process or condition characterization activities that produce information used in support of the design, construction, and operation of environmental technology should be conducted according to the specifications of Clause 5. The QMS elements in Clause 6 should be used in conjunction with Clause 4 to provide for a complete QMS for the design, construction, and operation of environmental technology.

Quality management systems for environmental information and technology programs - Requirements with guidance for use

1   SCOPE

This American National Standard specifies requirements for a Quality Management System (QMS) to enable an organization to formulate policies and procedures to plan and implement sufficient and adequate quality management practices for environmental programs.

This Standard is applicable to any organization that wishes to:

- – implement, maintain, and improve a QMS for environmental programs;

- – specify quality requirements when contracting for work;

- – assure itself of its conformity with its stated quality policy; and

- – demonstrate such conformity to others.

All the requirements in this Standard are intended to be incorporated into QMS supporting environmental programs involving the collection and use of related information and the design, construction, and use of environmental technology. The extent of the application of this Standard will depend on the environmental policy of the organization, the nature of its environmental programs, and the conditions under which it operates.

A QMS is the means by which an organization implements quality management in a systematic, organized manner. It is a management system in much the same manner as an organization manages its financial operations or health and safety programs. A quality system encompasses a variety of technical and administrative elements, including policies and objectives, organizational authority, responsibilities, accountability, and procedures and practices.

A QMS is the "blueprint" or framework by which an organization applies sufficient quality control (QC) and quality assurance (QA) practices to produce results from its environmental programs that meet or exceed the organization's objectives and expectations. The QMS encompasses both management and technical activities pertaining to the planning, implementation, and assessment of environmental programs within the organization's mission and scope.

The business plan model used for implementing a QMS based on this Standard encompasses three stages: planning, implementation, and assessment. This model is based on the concept of first planning the work, doing what was planned, and assessing the results against performance criteria, and acting on what was found by such a comparison (e.g., Plan-Do-Check-Act, or PDCA).

QMS for programs and activities subject to this Standard shall include requirements for:

- – general or common planning, implementation, and assessment policies, procedures, and management practices applied by the organization,

- – collection, generation, compilation, analysis, and use of environmental information, and