


# AMERICAN NATIONAL STANDARD

## *Quality Program Guidelines for Project Phase of Nonnuclear Power Generation Facilities*



AMERICAN SOCIETY FOR QUALITY CONTROL  
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## ***Quality Program Guidelines for Project Phase of Nonnuclear Power Generation Facilities***

*[Reaffirmation of ANSI/ASQC E1-1989]*

*Prepared by  
American Society for Quality Control Standards Committee  
for  
American National Standards Committee Z-1 on Quality Assurance*

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ASQC Mission: 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.

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# Foreword

(This Foreword is not part of American National Standard E1-1996, *Quality Program Guidelines for Project Phase of Nonnuclear Power Generation Facilities*.)

This document was developed to provide quality program guidelines for that segment of the electrical power generation industry which is not covered by mandatory nuclear quality standards nor other industry quality documents that are directly applicable. Although many standards are currently available, a detailed review of those standards reveals that adaptation of those standards or portions thereof to nonnuclear power generation applications would be difficult, if not impractical.

The intent of this document is to delineate the guidelines for a quality program which will provide adequate control of those factors that affect quality and reliability of nonnuclear power generation facilities.

The quality program is designed so that it may be applied in total or in part. The extent and manner in which this document is used must be determined by the organization imposing it based on the nature and scope of work, and the criticality of the item or services to operability, safety, reliability, environmental impact, or other such factors.

The adoption of this guideline, or any portion thereof, is voluntary on the part of the electrical power generation industry.

It must be recognized that this is a guideline only and adoption or utilization of it in whole or in part by any third party (e.g., utility, regulatory agency, insurance company) is neither intended nor condoned by ANSI/ASQC.

This document is a reaffirmation of E1-1989. The user may wish to consult other documents which were considered in the development of the 1989 edition of this document, such as:

ANSI/ASQC Z1.15 *Generic Guidelines for Quality Systems (superseded by ANSI/ISO/ASQC Q9004-1)*

ANSI/ASQC A1 *Definitions, Symbols, Formulas, and Tables of Control Charts (superseded in part by ANSI/ISO/ASQC A3534-1 and ANSI/ISO/ASQC A3534-2)*

ANSI/ASQC A2 *Terms, Symbols, and Definitions for Acceptance Sampling (superseded in part by ANSI/ISO/ASQC A3534-1 and ANSI/ISO/ASQC A3534-2)*

ANSI/ASQC A3 *Quality Systems Terminology (superseded by ANSI/ISO/ASQC A8402)*

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# Quality Program Guidelines for Project Phase of Nonnuclear Power Generation Facilities

## 1.0 INTRODUCTION

### 1.1 Scope

This document provides general guidelines for establishing and implementing a quality program for controlling design, procurement, manufacturing, construction, installation, and testing activities related to power generating facilities which are not covered by nuclear regulatory or other quality standards. The scope of this document extends to materials, parts, components, services, and systems as a means of obtaining and sustaining reliable facility operating capacity and availability, and thereby reducing the cost of producing electric energy.

### 1.2 Applicability

This document may be applied to, or by, any organization which has responsibility for performing activities associated with power generating facilities during the various phases as described in Paragraph 1.1 above. The user of this document is responsible for its interpretation and its application in total or in part to the user's organization or imposition of applicable portions on subtier organizations. Its application may vary from a total plant or facility to limited systems or components.

## 2.0 TERMS AND DEFINITIONS

Standard terminology is used throughout this document. If further clarification is required, refer to ANSI/ISO/ASQC A8402-1994, *Quality Management and Quality Assurance—Vocabulary*.

## 3.0 QUALITY POLICY AND QUALITY PROGRAM MANAGEMENT

### 3.1 Quality Objective

The objective of the quality program is to assure that adequate design criteria are specified and complied with to enhance the availability and reliability of operating facilities in a cost-effective manner.

### 3.2 Quality Program Description

The quality policy and program should be documented. Documentation may be accomplished by preparation of a

quality manual or procedures or a combination which is appropriate for the organization and the activities under its cognizance. These documents should be readily available to and used by persons performing quality-related tasks and/or functions.

The manual or procedures should define the extent to which the guidelines of this document apply to activities and items. This determination should be based on the importance (critical function) of an item as determined by the criteria listed in 3.3.

### 3.3 Quality Planning

Planning should take into consideration (1) the nature of the work or service, (2) the importance of the work to plant operation, (3) the necessity for procedures or instructions, (4) the need for trained personnel, special equipment, and documentation, (5) the need for control measures to ensure satisfactory performance of quality-related tasks and functions, and (6) cost effectiveness of its application. Planning actions should focus on defect prevention.

Quality planning should also include determining the requirements that will be imposed on primary contractors, subcontractors, and suppliers. This determination should be based on the significance of the item or service, including cost-to-benefit considerations. Criteria for determining significance may include items or activities, the failure of which could:

- a) Create a safety hazard to operating personnel and equipment or cause shutdown of the unit.
- b) Have adverse environmental impact.
- c) Cause a reduction in output of the generating source, or create the need for excessive repair, maintenance, or replacement costs.
- d) Cause delays in construction schedules due to unacceptable material or rework.

### 3.4 Administration

Responsibility and authority should be clearly defined for personnel charged with implementing and administering the quality program. The following guidelines should be followed as applicable: