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AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Practice for Evaluation of Spectrochemical Laboratories¹

This standard is issued under the fixed designation E 851; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

^{ε1} NOTE—Sections 11 was added editorially in January 1995.

1. Scope

1.1 This practice establishes minimum requirements for evaluation and accreditation of laboratories that perform spectrochemical services.

1.2 This practice is intended for use by an authority evaluating a laboratory which offers spectrochemical services, or by a laboratory to prepare for accreditation.

1.3 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 ASTM Standards:

- E 135 Terminology Relating to Analytical Chemistry for Metals, Ores, and Related Materials²
- E 548 Guide for General Criteria Used for Evaluating Laboratory Competence³
- E 743 Guide for Spectrochemical Laboratory Quality Assurance⁴

3. Terminology

3.1 Descriptions of Terms Specific to This Standard:

3.1.1 *authority*—an organization, either external or internal, that evaluates the laboratory's analytical facilities.

3.1.2 *contractual requirements* — requirements imposed on an organization by a binding legal agreement, such as a research contract or a purchase order.

3.1.3 *customer*—an organization, either external or internal, producer or consumer, that requires the laboratory's services.

3.1.4 *internal requirements*—standard operating procedures established by the agency or its parent entity.

3.1.5 *laboratory*—the testing organization that supplies spectrochemical services to a customer, and which is subject to evaluation by an authority of its resources, facilities, technical competence, quality systems, objectivity, and integrity.

3.1.6 *project requirements* — requirements, covering ma-

terial produced or processed under a formalized project system, that must be observed by the agency in the performance of its work on that material.

3.1.7 *quality system*—the procedures followed to assure that the services provided by a laboratory satisfy the specified need(s).

3.1.8 *resources*—personnel, equipment, supporting documents, and other reference literature that constitutes the laboratory.

3.2 *Definitions*—For definitions of other terms used in this practice, refer to Terminology E 135.

4. Significance and Use

4.1 Laboratories must provide analytical services that enable the producer to determine that the performance specifications have been met per contractual agreement for the purchase of materials. The customer, in turn, needs to be assured that the laboratory is qualified to provide accurate analyses so that incorrect material is not supplied. The laboratory is equally concerned about the quality of analytical services it provides to avoid costly claims and maintain satisfied customers. This document can be used by either a customer or representative authority attempting to verify that a laboratory meets standards of accreditation, or it can be used by the laboratory to prepare for an evaluation or audit by the customer or representative authority. For additional information regarding criteria for evaluation of testing agencies (laboratories), refer to Guide E 548.

5. Limitations

5.1 Conformance to this practice will vary according to the situation in a particular laboratory or the criticalness of the materials involved. In some cases, portions of this document may not be applicable; in others, more information may be required. Furthermore, if a laboratory requires the services of another laboratory, the resources of the supporting laboratory shall be subject to a separate evaluation at the discretion of the authority.

5.2 Alternative approaches to specific procedures or methods stated in this practice will be acceptable, provided the laboratory can show that such approaches are equally valid.

6. Responsibilities of the Authority

6.1 The authority representative shall be knowledgeable in the field of emission spectroscopy as it relates to the specific laboratory.

6.2 The authority representative shall evaluate only those

¹ This practice is under the jurisdiction of ASTM Committee E-1 on Analytical Chemistry of Metals, Ores and Related Materials and is the direct responsibility of Subcommittee E01.22 on Statistics and Quality Control.

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² Annual Book of ASTM Standards, Vol 03.05.

³ Annual Book of ASTM Standards, Vol 14.02.

⁴ Annual Book of ASTM Standards, Vol 03.06.