Sec.

CHAPTER REFERRED TO IN OTHER SECTIONS

This chapter is referred to in section 290d of this title.

§ 271. Findings and purposes

(a) The Congress finds and declares the following:

(1) The future well-being of the United States economy depends on a strong manufacturing base and requires continual improvements in manufacturing technology, quality control, and techniques for ensuring product reliability and cost-effectiveness.

(2) Precise measurements, calibrations, and standards help United States industry and manufacturing concerns compete strongly in world markets.

(3) Improvements in manufacturing and product technology depend on fundamental scientific and engineering research to develop (A) the precise and accurate measurement methods and measurement standards needed to improve quality and reliability, and (B) new technological processes by which such improved methods may be used in practice to improve manufacturing and to assist industry to transfer important laboratory discoveries into commercial products.

(4) Scientific progress, public safety, and product compatibility and standardization also depend on the development of precise measurement methods, standards, and related basic technologies.

(5) The National Bureau of Standards since its establishment has served as the Federal focal point in developing basic measurement standards and related technologies, has taken a lead role in stimulating cooperative work among private industrial organizations in efforts to surmount technological hurdles, and otherwise has been responsible for assisting in the improvement of industrial technology.

(6) The Federal Government should maintain a national science, engineering, and technology laboratory which provides measurement methods, standards, and associated technologies and which aids United States companies in using new technologies to improve products and manufacturing processes.

(7) Such national laboratory also should serve industry, trade associations, State technology programs, labor organizations, professional societies, and educational institutions by disseminating information on new basic technologies including automated manufacturing processes.

(b) It is the purpose of this chapter—

(1) to rename the National Bureau of Standards as the National Institute of Standards and Technology and to modernize and restructure that agency to augment its unique ability to enhance the competitiveness of American industry while maintaining its traditional function as lead national laboratory for providing the measurements, calibrations, and quality assurance techniques which underpin United States commerce, technological progress, improved product reliability and manufacturing processes, and public safety;

(2) to assist private sector initiatives to capitalize on advanced technology;

(3) to advance, through cooperative efforts among industries, universities, and government laboratories, promising research and development projects, which can be optimized by the private sector for commercial and industrial applications; and

(4) to promote shared risks, accelerated development, and pooling of skills which will be necessary to strengthen America's manufacturing industries.

(Mar. 3, 1901, ch. 872, §1, 31 Stat. 1449; Pub. L. 100–418, title V, §5111, Aug. 23, 1988, 102 Stat. 1427.)

REFERENCES IN TEXT

This chapter, referred to in subsec. (b), was in the original ''this Act'' meaning act Mar. 3, 1901, ch. 872, 31 Stat. 1449, as amended, known as the National Institute of Standards and Technology Act, which is classified generally to this chapter. For complete classification of this Act to the Code, see Short Title note below and Tables.

AMENDMENTS

1988—Pub. L. 100–418 amended section generally. Prior to amendment, section read as follows: ''The Office of Standard Weights and Measures shall be known as the National Bureau of Standards.''

CHANGE OF NAME; NATIONAL BUREAU OF STANDARDS REDESIGNATED NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

Section 5115(c) of Pub. L. 100–418 provided that: ''References in any other Federal law to the National Bureau of Standards shall be deemed to refer to the National Institute of Standards and Technology.''

Act Mar. 4, 1913, ch. 141, §1, 37 Stat. 736, created the Department of Labor and renamed the Department of Commerce and Labor as the Department of Commerce.

SHORT TITLE OF 1998 AMENDMENT

Pub. L. 105–309, §1, Oct. 30, 1998, 112 Stat. 2935, provided that: ''This Act [enacting sections 278g–2a, 278p, and 1511e of this title, amending sections 278k, 3704, and 3711a of this title, enacting provisions set out as notes under sections 272 and 3711 of this title, and amending provisions set out as a note under this section] may be cited as the 'Technology Administration Act of 1998'.''

SHORT TITLE OF 1992 AMENDMENT

Pub. L. 102–245, title II, §201(a), Feb. 14, 1992, 106 Stat. 15, provided that: ''This title [amending sections 272 and 278n of this title and enacting provisions set out as notes under section 278n of this title] may be cited as the 'Emerging Technologies and Advanced Technology Program Amendments Act of 1991'.''

SHORT TITLE OF 1988 AMENDMENT

Section 5101 of Pub. L. 100–418 provided that: ''This part [part I (§§5101–5164) of subtitle B of title V of Pub.

L. 100–418, enacting sections 205j–1, 278i to 278*o*, 282a, 1532, 1533, 3704a, and 4632 of this title, amending this section, sections 205a, 205b, 205k, 272 to 275, 278, 278b, 278d, 278e, 278g to 278g–4, 3703, 3706, 3708, 3710, 3710c, and 3713 of this title, and section 5315 of Title 5, Government Organization and Employees, repealing sections 280 to 282 of this title, enacting provisions set out as notes under this section, sections 272, 272, 278*l*, and 278n of this title, and section 1803 of Title 30, Mineral Lands and Mining, and amending provisions set out as a note under this section] may be cited as the 'Technology Competitiveness Act'.''

SHORT TITLE

Act Mar. 3, 1901, ch. 872, § 32, formerly § 23, as added Jan. 8, 1988, Pub. L. 100–235, § 3(3), 101 Stat. 1728; renumbered § 31 and amended Pub. L. 100–418, title V, §§ 5114(1), 5115(a)(2), Aug. 23, 1988, 102 Stat. 1432, 1433; renumbered § 32, Pub. L. 105–309, § 4(a), Oct. 30, 1998, 112 Stat. 2935, provided that: ''This Act [enacting this chapter] may be cited as the National Institute of Standards and Technology Act.''

[Another section 32 of act Mar. 3, 1901, ch. 872, is classified to section 278q of this title.]

SAVINGS PROVISION

Act Mar. 3, 1901, ch. 872, § 29, as added Aug. 23, 1988, Pub. L. 100–418, title V, § 5161, 102 Stat. 1449, provided that: ''All rules and regulations, determinations, standards, contracts, certifications, authorizations, delegations, results and findings of investigations, or other actions duly issued, made, or taken by or pursuant to this Act [enacting this chapter], or under the authority of any other statutes which resulted in the assignment of functions or activities to the Secretary, the Department, the Director, or the Institute, as are in effect immediately before the date of enactment of this section [Aug. 23, 1988], and not suspended by the Secretary, the Director, the Institute or the courts, shall continue in full force and effect after the date of enactment of this section until modified or rescinded.''

§ 272. Establishment, functions, and activities

(a) Establishment of National Institute of Standards and Technology

There is established within the Department of Commerce a science, engineering, technology, and measurement laboratory to be known as the National Institute of Standards and Technology (hereafter in this chapter referred to as the ''Institute'').

(b) Functions of Secretary and Institute

The Secretary of Commerce (hereafter in this chapter referred to as the ''Secretary'') acting through the Director of the Institute (hereafter in this chapter referred to as the ''Director'') and, if appropriate, through other officials, is authorized to take all actions necessary and appropriate to accomplish the purposes of this chapter, including the following functions of the Institute—

(1) to assist industry in the development of technology and procedures needed to improve quality, to modernize manufacturing processes, to ensure product reliability, manufacturability, functionality, and cost-effectiveness, and to facilitate the more rapid commercialization, especially by small- and medium-sized companies throughout the United States, of products based on new scientific discoveries in fields such as automation, electronics, advanced materials, biotechnology, and optical technologies;

(2) to develop, maintain, and retain custody of the national standards of measurement, and provide the means and methods for making measurements consistent with those standards;

(3) to compare standards used in scientific investigations, engineering, manufacturing, commerce, industry, and educational institutions with the standards adopted or recognized by the Federal Government and to coordinate the use by Federal agencies of private sector standards, emphasizing where possible the use of standards developed by private, consensus organizations;

(4) to enter into contracts, including cooperative research and development arrangements, in furtherance of the purposes of this chapter;

(5) to provide United States industry, Government, and educational institutions with a national clearinghouse of current information, techniques, and advice for the achievement of higher quality and productivity based on current domestic and international scientific and technical development;

(6) to assist industry in the development of measurements, measurement methods, and basic measurement technology;

(7) to determine, compile, evaluate, and disseminate physical constants and the properties and performance of conventional and advanced materials when they are important to science, engineering, manufacturing, education, commerce, and industry and are not available with sufficient accuracy elsewhere;

(8) to develop a fundamental basis and methods for testing materials, mechanisms, structures, equipment, and systems, including those used by the Federal Government;

(9) to assure the compatibility of United States national measurement standards with those of other nations;

(10) to cooperate with other departments and agencies of the Federal Government, with industry, with State and local governments, with the governments of other nations and international organizations, and with private organizations in establishing standard practices, codes, specifications, and voluntary consensus standards;

(11) to advise government and industry on scientific and technical problems;

(12) to invent, develop, and (when appropriate) promote transfer to the private sector of measurement devices to serve special national needs; and

(13) to coordinate Federal, State, and local technical standards activities and conformity assessment activities, with private sector technical standards activities and conformity assessment activities, with the goal of eliminating unnecessary duplication and complexity in the development and promulgation of conformity assessment requirements and measures.

(c) Implementation activities

In carrying out the functions specified in subsection (b) of this section, the Secretary, acting through the Director and, if appropriate, through other appropriate officials, may, among other things—

(1) construct physical standards;

(2) test, calibrate, and certify standards and standard measuring apparatus;

(3) study and improve instruments, measurement methods, and industrial process control and quality assurance techniques;

(4) cooperate with the States in securing uniformity in weights and measures laws and methods of inspection;

(5) cooperate with foreign scientific and technical institutions to understand technological developments in other countries better;

(6) prepare, certify, and sell standard reference materials for use in ensuring the accuracy of chemical analyses and measurements of physical and other properties of materials;

(7) in furtherance of the purposes of this chapter, accept research associates, cash donations, and donated equipment from industry, and also engage with industry in research to develop new basic and generic technologies for traditional and new products and for improved production and manufacturing;

(8) study and develop fundamental scientific understanding and improved measurement, analysis, synthesis, processing, and fabrication methods for chemical substances and compounds, ferrous and nonferrous metals, and all traditional and advanced materials, including processes of degradation;

(9) investigate ionizing and nonionizing radiation and radioactive substances, their uses, and ways to protect people, structures, and equipment from their harmful effects;

(10) determine the atomic and molecular structure of matter, through analysis of spectra and other methods, to provide a basis for predicting chemical and physical structures and reactions and for designing new materials and chemical substances, including biologically active macromolecules;

(11) perform research on electromagnetic waves, including optical waves, and on properties and performance of electrical, electronic, and electromagnetic devices and systems and their essential materials, develop and maintain related standards, and disseminate standard signals through broadcast and other means;

(12) develop and test standard interfaces, communication protocols, and data structures for computer and related telecommunications systems;

(13) study computer systems (as that term is defined in section 278g–3(d)[1] of this title) and their use to control machinery and processes;

(14) perform research to develop standards and test methods to advance the effective use of computers and related systems and to protect the information stored, processed, and transmitted by such systems and to provide advice in support of policies affecting Federal computer and related telecommunications systems;

(15) determine properties of building materials and structural elements, and encourage their standardization and most effective use, including investigation of fire-resisting properties of building materials and conditions under which they may be most efficiently used, and the standardization of types of appliances for fire prevention;

(16) undertake such research in engineering, pure and applied mathematics, statistics, computer science, materials science, and the physical sciences as may be necessary to carry out and support the functions specified in this section;

(17) compile, evaluate, publish, and otherwise disseminate general, specific and technical data resulting from the performance of the functions specified in this section or from other sources when such data are important to science, engineering, or industry, or to the general public, and are not available elsewhere;

(18) collect, create, analyze, and maintain specimens of scientific value;

(19) operate national user facilities;

(20) evaluate promising inventions and other novel technical concepts submitted by inventors and small companies and work with other Federal agencies, States, and localities to provide appropriate technical assistance and support for those inventions which are found in the evaluation process to have commercial promise;

(21) demonstrate the results of the Institute's activities by exhibits or other methods of technology transfer, including the use of scientific or technical personnel of the Institute for part-time or intermittent teaching and training activities at educational institutions of higher learning as part of and incidental to their official duties; and

(22) undertake such other activities similar to those specified in this subsection as the Director determines appropriate.

(d) Management costs

In carrying out the extramural funding programs of the Institute, including the programs established under sections 278k, 278*l*, and 278n of this title, the Secretary may retain reasonable amounts of any funds appropriated pursuant to authorizations for these programs in order to pay for the Institute's management of these programs.

(Mar. 3, 1901, ch. 872, §2, 31 Stat. 1449; July 22, 1950, ch. 486, §1, 64 Stat. 371; Pub. L. 92–317, §3(b), June 22, 1972, 86 Stat. 235; Pub. L. 100–235, §3(1), Jan. 8, 1988, 101 Stat. 1724; Pub. L. 100–418, title V, §5112(a), Aug. 23, 1988, 102 Stat. 1428; Pub. L. 102–245, title II, §201(e), Feb. 14, 1992, 106 Stat. 19; Pub. L. 104–113, §12(a), (b), Mar. 7, 1996, 110 Stat. 782.)

REFERENCES IN TEXT

Section 278g–3 of this title, referred to in subsec. (c)(13), was amended, and no longer defines the term ''computer systems''.

AMENDMENTS

1996—Subsec. (b)(2). Pub. L. 104–113, §12(a)(1), struck out '', including comparing standards used in scientific investigations, engineering, manufacturing, commerce, industry, and educational institutions with the standards adopted or recognized by the Federal Government'' after ''consistent with those standards''.

Subsec. (b)(3) to (12). Pub. L. 104–113, §12(a)(2), (3), added par. (3) and redesignated former pars. (3) to (11) as (4) to (12), respectively.

Subsec. (b)(13). Pub. L. 104–113, §12(b)(3), added par. (13).

[1] See References in Text note below.

1992—Subsec. (d). Pub. L. 102–245 added subsec. (d).

1988—Pub. L. 100–418 amended section generally, substituting provisions relating to establishment, functions and activities of the National Institute of Standards and Technology and the Secretary of Commerce for provisions which authorized Secretary to undertake certain enumerated functions and activities related to the National Bureau of Standards and for which need might arise in operations of Government agencies, scientific institutions, and industrial enterprises.

Par. (20). Pub. L. 100–235 added par. (20).

1972—Par. (19). Pub. L. 92–317 inserted provisions authorizing use of National Bureau of Standards personnel for teaching and training activities without additional compensation.

1950—Act July 22, 1950, provided basic authority for performance of certain functions and activities of Department of Commerce.

ENHANCEMENT OF SCIENCE AND MATHEMATICS PROGRAMS

Pub. L. 105–309, § 6, Oct. 30, 1998, 112 Stat. 2936, provided that:

''(a) DEFINITIONS.—In this section—

''(1) EDUCATIONALLY USEFUL FEDERAL EQUIPMENT.—The term 'educationally useful Federal equipment' means computers and related peripheral tools and research equipment that is appropriate for use in schools.

''(2) SCHOOL.—The term 'school' means a public or private educational institution that serves any of the grades of kindergarten through grade 12.

''(b) SENSE OF THE CONGRESS.—

''(1) IN GENERAL.—It is the sense of the Congress that the Director of the National Institute of Standards and Technology should, to the greatest extent practicable and in a manner consistent with applicable Federal law (including Executive Order No. 12999 [40 U.S.C. 549 note]), donate educationally useful Federal equipment to schools in order to enhance the science and mathematics programs of those schools.

''(2) REPORTS.—

''(A) IN GENERAL.—Not later than 1 year after the date of the enactment of this Act [Oct. 30, 1998], and annually thereafter, the Director of the National Institute of Standards and Technology shall prepare and submit to the President a report. The President shall submit the report to Congress at the same time as the President submits a budget request to Congress under section 1105(a) of title 31, United States Code.

''(B) CONTENTS OF REPORT.—The report prepared by the Director under this paragraph shall describe any donations of educationally useful Federal equipment to schools made during the period covered by the report.''

TRANSMITTAL OF PLAN FOR STANDARDS CONFORMITY TO CONGRESS

Section 12(c) of Pub. L. 104–113 provided that: ''The National Institute of Standards and Technology shall, within 90 days after the date of enactment of this Act [Mar. 7, 1996], transmit to the Congress a plan for implementing the amendments made by this section [amending this section and enacting provisions set out as a note below].''

UTILIZATION OF CONSENSUS TECHNICAL STANDARDS BY FEDERAL AGENCIES

Pub. L. 104–113, § 12(d), Mar. 7, 1996, 110 Stat. 783, as amended by Pub. L. 107–107, div. A, title XI, § 1115, Dec. 28, 2001, 115 Stat. 1241, provided that:

''(1) IN GENERAL.—Except as provided in paragraph (3) of this subsection, all Federal agencies and departments shall use technical standards that are developed or adopted by voluntary consensus standards bodies, using such technical standards as a means to carry out policy objectives or activities determined by the agencies and departments.

''(2) CONSULTATION; PARTICIPATION.—In carrying out paragraph (1) of this subsection, Federal agencies and departments shall consult with voluntary, private sector, consensus standards bodies and shall, when such participation is in the public interest and is compatible with agency and departmental missions, authorities, priorities, and budget resources, participate with such bodies in the development of technical standards.

''(3) EXCEPTION.—If compliance with paragraph (1) of this subsection is inconsistent with applicable law or otherwise impractical, a Federal agency or department may elect to use technical standards that are not developed or adopted by voluntary consensus standards bodies if the head of each such agency or department transmits to the Office of Management and Budget an explanation of the reasons for using such standards. Each year, beginning with fiscal year 1997, the Office of Management and Budget shall transmit to Congress and its committees a report summarizing all explanations received in the preceding year under this paragraph.

''(4) EXPENSES OF GOVERNMENT PERSONNEL.—Section 5946 of title 5, United States Code, shall not apply with respect to any activity of an employee of a Federal agency or department that is determined by the head of that agency or department as being an activity undertaken in carrying out this subsection.

''(5) DEFINITION OF TECHNICAL STANDARDS.—As used in this subsection, the term 'technical standards' means performance-based or design-specific technical specifications and related management systems practices.''

INTERNATIONAL STANDARDS

Pub. L. 100–519, title I, § 112, Oct. 24, 1988, 102 Stat. 2592, provided that:

''(a) PROGRAM.—The Secretary, acting through the Director of the National Institute of Standards and Technology and other appropriate officials, shall seek funding for and establish, within 6 months after the date of the enactment of this Act [Oct. 24, 1988], a program to assist other countries in the development of their domestic standards which are compatible with standards in general use in the United States. After the program is established, it shall be funded through voluntary contributions from the private sector to fully reimburse the United States for expenses incurred during fiscal years 1989 and 1990. The program shall begin on a pilot basis focusing on one or two countries or groups of countries which are major United States trading partners and have expressed interest in such program. The Secretary shall ensure that contributions which are earmarked by country are spent to assist the development of standards by that country or group of countries.

''(b) LONG-TERM PLAN.—No later than June 30, 1989, the Secretary shall submit to the Committee on Science, Space, and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a long-term plan for assistance under this section for each nation or group of nations which annually has imports of at least $1,000,000,000 from the United States (or has the potential for being a major importer from the United States) and which desires such assistance. The plan shall include a description of the resources needed to provide such assistance, the appropriate and likely sources of such funds, and the appropriate relationship between the program established under this section and private sector standards organizations. Special consideration is to be given to the feasibility of establishing a data base and other methods for making standards information developed in cooperation with one country available to other countries.''

INITIAL ORGANIZATION PLAN FOR INSTITUTE

Section 5112(d) of Pub. L. 100–418 provided that:

''(1) At least 60 days before its effective date and within 120 days after the date of the enactment of this Act [Aug. 23, 1988], an initial organization plan for the