

the date this Act is approved, the legal units of electrical and photometric measurement in the United States of America shall be those defined and established as provided in the following sections.

SEC. 2. The unit of electrical resistance shall be the ohm, which is equal to one thousand million units of resistance of the centimeter-gram-second system of electromagnetic units.

SEC. 3. The unit of electric current shall be the ampere, which is one-tenth of the unit of current of the centimeter-gram-second system of electromagnetic units.

SEC. 4. The unit of electromotive force and of electric potential shall be the volt, which is the electromotive force that, steadily applied to a conductor whose resistance is one ohm, will produce a current of one ampere.

SEC. 5. The unit of electric quantity shall be the coulomb, which is the quantity of electricity transferred by a current of one ampere in one second.

SEC. 6. The unit of electrical capacitance shall be the farad, which is the capacitance of a capacitor that is charged to a potential of one volt by one coulomb of electricity.

SEC. 7. The unit of electrical inductance shall be the henry, which is the inductance in a circuit such that an electromotive force of one volt is induced in the circuit by variation of an inducing current at the rate of one ampere per second.

SEC. 8. The unit of power shall be the watt, which is equal to ten million units of power in the centimeter-gram-second system, and which is the power required to cause an unvarying current of one ampere to flow between points differing in potential by one volt.

SEC. 9. The units of energy shall be (a) the joule, which is equivalent to the energy supplied by a power of one watt operating for one second, and (b) the kilowatt-hour, which is equivalent to the energy supplied by a power of one thousand watts operating for one hour.

SEC. 10. The unit of intensity of light shall be the candle, which is one-sixtieth of the intensity of one square centimeter of a perfect radiator, known as a "black body", when operated at the temperature of freezing platinum.

SEC. 11. The unit of flux of light shall be the lumen, which is the flux in a unit of solid angle from a source of which the intensity is one candle.

SEC. 12. It shall be the duty of the Secretary of Commerce to establish the values of the primary electric and photometric units in absolute measure, and the legal values for these units shall be those represented by, or derived from, national reference standards maintained by the Department of Commerce.

SEC. 13. The Act of July 12, 1894 (Public Law Numbered 105, Fifty-third Congress), entitled "An Act to define and establish the units of electrical measure", is hereby repealed.

Approved July 21, 1950.

[CHAPTER 485]

AN ACT

To provide authority for certain functions and activities in the Department of Commerce, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That funds now or hereafter appropriated to the National Bureau of Standards shall be available for the following activities: (a) The purchase, repair, and cleaning of uniforms for guards; (b) the repair and alteration of buildings, and other plant facilities; (c) the rental of laboratory and

Repeal.  
28 Stat. 101.  
15 U. S. C. §§ 221,  
222.

July 21, 1950  
[S. 2046]  
[Public Law 618]

National Bureau of  
Standards.  
Use of funds for  
designated activities.

office space in the District of Columbia and in the field; (d) the purchase of reprints from trade journals or other periodicals of articles prepared officially by Government employees; (e) the furnishing of food and shelter without repayment therefor to employees of the Government at Arctic stations; and (f) in the conduct of observations on radio propagation phenomena in the Arctic region, the appointment of employees at base rates established by the Secretary of Commerce which shall not exceed such maximum rates as may be specified from time to time in the appropriation concerned, and without regard to the civil service and classification laws and titles II and III of the Federal Employees Pay Act of 1945.

SEC. 2. Within the limits of funds which may be appropriated therefor, the Secretary of Commerce is authorized to make improvements to existing buildings, grounds, and other plant facilities, including construction of minor buildings and other facilities of the National Bureau of Standards in the District of Columbia and in the field to house special apparatus or material which must be isolated from other activities: *Provided*, That no improvement shall be made nor shall any building be constructed under this authority at a cost in excess of \$25,000, unless specific provision is made therefor in the appropriation concerned.

Approved July 21, 1950.

59 Stat. 296, 298.  
5 U. S. C., §§ 911-913, 921, 922; Sup. III, § 914.  
Building improvements, etc.

[CHAPTER 486]

AN ACT

To amend section 2 of the Act of March 3, 1901 (31 Stat. 1449), to provide basic authority for the performance of certain functions and activities of the Department of Commerce, and for other purposes.

July 22, 1950  
[S. 2201]  
[Public Law 619]

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That section 2 of the Act of March 3, 1901 (31 Stat. 1449), as amended, be, and the same hereby is, further amended so as to read in full as follows:

“SEC. 2. The Secretary of Commerce (hereinafter referred to as the ‘Secretary’) is authorized to undertake the following functions:

“(a) The custody, maintenance, and development of the national standards of measurement, and the provision of means and methods for making measurements consistent with those standards, including the comparison of standards used in scientific investigations, engineering, manufacturing, commerce, and educational institutions with the standards adopted or recognized by the Government.

“(b) The determination of physical constants and properties of materials when such data are of great importance to scientific or manufacturing interests and are not to be obtained of sufficient accuracy elsewhere.

“(c) The development of methods for testing materials, mechanisms, and structures, and the testing of materials, supplies, and equipment, including items purchased for use of Government departments and independent establishments.

“(d) Cooperation with other governmental agencies and with private organizations in the establishment of standard practices, incorporated in codes and specifications.

“(e) Advisory service to Government agencies on scientific and technical problems.

“(f) Invention and development of devices to serve special needs of the Government.

“In carrying out the functions enumerated in this section, the Secretary is authorized to undertake the following activities and similar

Department of  
Commerce.  
15 U. S. C. § 272;  
Sup. III, § 272 notes.

Authority to undertake designated functions.