

Materials, 1916 Race Street, Philadelphia, PA 19103.) Similar listings appear in buyer's guides for commercial products and in technical journals concerned with physical measurement.

§ 200.103 Consulting and advisory services.

(a) In areas of its special competence, NIST offers consulting and advisory services on various problems related to measurement, e.g., details of design and construction, operational aspects, unusual or extreme conditions, methods of statistical control of the measurement process, automated acquisition of laboratory data, and data reduction and analysis by computer. Brief consultation may be obtained at no charge; the fee for extended effort will be based upon actual costs incurred. The services outlined in this paragraph do not include services in connection with legal proceedings not involving the United States as a named party, nor to testimony or the production of data, information, or records in such legal proceedings which is governed by the policies and procedures set forth in Subchapter H, Chapter II, Part 275, of this title.

(b) To enhance the competence of standards laboratory personnel, NIST conducts at irregular intervals several group seminars on the precision measurement of specific types of physical quantities, offering the opportunity of laboratory observation and informal discussion. A brochure describing the current series of seminars can be obtained by writing the Office of Measurement Services, National Institute of Standards & Technology, Washington, DC 20234.

§ 200.104 Standard reference materials.

Often the performance of a device or structure can be evaluated at the user's laboratory by comparing its response to unknown materials with its response to a stable, homogeneous reference specimen which has been well-characterized with regard to the physical or chemical property being measured. For information regarding carefully characterized materials see Subchapter B, Chapter II, Part 230, of this title. The Office of Standard Reference

Materials in the NIST National Measurement Laboratory administers a program to provide many types of well-characterized materials that are needed to calibrate a measurement system or to produce scientific data that can be readily referred to a common base. NIST SP 260 is a catalog of Standard Reference Materials available from NIST.

§ 200.105 Standard reference data.

Data on the physical and chemical properties of the large variety of substances used in science and technology need to be compiled and evaluated for application in research, development, engineering design, and commerce. The Office of Standard Reference Data (OSRD) in the NIST National Measurement Laboratory provides coordination of and access to a number of governmental and nongovernmental data centers throughout this country and the world which are responsive to user needs for data. The OSRD's present program is assembled under a series of tasks which include data for application in energy, environment and health, industrial process design, materials durability, and resource recovery. The subject data are disseminated as hard-copy information in the Journal of Physical and Chemical Reference Data, published jointly with the American Chemical Society and the American Institute of Physics, in the National Standard Reference Data System reports as the NSRDS-NIST series, and as NIST special reports. Magnetic tapes of data on selected topics are also issued through the OSRD and the National Technical Information Service. A newsletter, "Reference Data Report," is issued bimonthly describing current activities. Information concerning the above is available upon request from the OSRD.

§ 200.106 Publications.

Publications provide the primary means of communicating the results of the NIST programs and services to its varied technical audiences, as well as to the general public. NIST issues some fifteen categories of publications including three periodicals, ten non-periodicals series, interagency reports, and

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papers in the journals and books of professional organizations, technological associations, and commercial publications. The calibration services, standard reference materials and related measurement services along with changes and fees are published in two Special Publications (SP's) and their supplements. These are SP 250 "Calibration and Related Measurement Services of the National Institute of Standards & Technology"¹ and SP 260 "NIST Standard Reference Materials Catalog."¹ A complete catalog of all publications by NIST authors is issued annually as a supplement to SP 305 "Publications of the National Institute of Standards & Technology." Announcements and listings of recent NIST publications and services are published in each issue of the bimonthly "NIST Journal of Research"² and the NIST monthly magazine, "Dimensions/NIST"². Complete citations to NIST publications, along with information on availability are published bimonthly in the "NIST Publications Newsletter", available free from the Technical Information and Publications Division, National Institute of Standards & Technology, Washington, DC 20234. NIST publications are also announced (with abstracts) in "Government Reports Announcements and Index" published every two weeks by the National Technical Information Service (NTIS), Springfield, Virginia 22161³. NTIS also sells microfiche copies of all NIST GPO-published documents, as well as paper copy and microfiche versions of NIST Inter-agency Reports.

¹Single copies available free from the National Institute of Standards & Technology, Washington, DC 20234.

²For sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, for a subscription price. The annual subscription price for the NIST Journal of Research on the date of the publication of these regulations is \$13.00 and for Dimensions/NIST it is \$11.00. Prices, however, for these publications are subject to change without notice.

³The annual subscription rate at the date of the publication of these regulations for this service is \$275.00, North American Continent, \$375.00 all others.

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§ 200.107 WWV-WWVH-WWVB broadcasts.

(a) *Technical services.* The NIST radio stations WWV at Fort Collins, Colorado, and WWVH on the island of Kauai, Hawaii, broadcast a number of technical services continuously night and day. These services are:

(1) Standard radio frequencies, 2.5, 5, 10, 15, and 20, MHz (WWV) and 2.5, 5, 10, and 15 MHz (WWVH); (2) standard time signals; (3) time intervals; (4) UTI corrections; (5) standard audio frequencies; (6) standard musical pitch; (7) a slow time code; (8) Omega Navigation System status reports; (9) geophysical alerts; and (10) marine storm warnings. NIST also broadcasts time and frequency signals from its low frequency station, WWVB, also located at Fort Collins, Colorado.

(2) [Reserved]

(b) *Time announcements.* Once per minute voice announcements are made from WWV and WWVH. The two stations are distinguished by a female voice from WWVH and a male voice from WWV. The WWVH announcement occurs first, at 15 seconds before the minute, while the WWV announcement occurs at 7½ seconds before the minute. Coordinated Universal Time (UTC) is used in these announcements.

(c) *Time corrections.* The UTC time scale operates on atomic frequency, but by means of step adjustments is made to approximate the astronomical UTI scale. It may disagree from UTI by as much as 0.9 second before step adjustments of exactly 1 second are made. These adjustments, or leap seconds are required about once per year and will usually be made on December 31 or June 30. For those who need astronomical time more accurately than 0.9 second, a correction to UTC is encoded by the use of double ticks after the start of each minute. The first through the eighth seconds ticks will indicate a "plus" correction, and from the ninth through the 16th a "minus" correction. The correction is determined by counting the number of double ticks. For example, if the first, second, and third ticks are doubled, the correction is "plus" 0.3 second. If the ninth, 10th, 11th, and 12th ticks are doubled, the correction is "minus" 0.4 second.