

GENERAL DESCRIPTION OF CLASS

The METROLOGIST manages the Oregon Measurement Standards Laboratory, calibrates measures of mass, length and volume against the official State of Oregon standards, and ensures that the Laboratory and its personnel remain certified by the National Bureau of Standards, U.S. Department of Commerce, in order to provide standards calibration services traceable to the U.S. national standards for industry, government agencies, educational institutions, business and research facilities.

DISTINGUISHING FEATURES

This is a single classification and not currently part of a series of classes.

DUTIES AND RESPONSIBILITIES

- 1.Laboratory Management.** Typical tasks: safeguards, controls access to, and arranges for the appropriate use and custody transfer of the State's primary standards of mass, length and volume; designs, specifies and orders field standards, metrological supplies and associated equipment; prepares and keeps track of standards, laboratory, statistical and cost information; authorizes billings to firms, agencies and individuals for laboratory calibration and related metrology services; controls the Oregon Master Railroad Track Scale facility in Portland and schedules railroad test car calibration; performs statistical control tests and audits necessary to maintain the Oregon Laboratory's Competency Certification by the National Bureau of Standards.
- 2.Standards Calibration.** Typical tasks: calibrates, verifies and seals regulatory standards and equipment for the Department, other agencies, institutions, commercial and industrial firms and other jurisdictions in accordance with methods and procedures established by the National Bureau of Standards, including standards for the proving of devices that measure compressed gases, flammable, caustic, cryogenic or corrosive liquids; calibrates all railroad track scale test cars operated in the western United States; maintains the State primary and secondary standards and the Oregon Laboratory's precision measuring instruments and equipment, in conformity to the legal and technical requirements of the National Bureau of Standards.
- 3.Program Coordination.** Typical tasks: coordinates and monitors the Heavy Capacity Weighing Device Examination Program of the division; ensures that department-owned scale test trucks, large mass standards and weight-handling systems are functional, safe to operate and properly maintained; coordinates the acquisition of new heavy capacity field test equipment and the replacement of obsolete or worn-out units; coordinates the custody transfer of motor fuel quality samples from division field staff to appropriate analytical laboratories so that the chain of evidence for enforcement purposes remains intact; assists in planning motor fuel field sampling programs for octane number compliance, lead content, and type and percentage of alcohol (ethanol, methanol, etc.) contained in the fuel.
- 4.Liaison and Consultation.** Typical tasks: advises commercial, industrial, institutional and government users of measurement standards on technical requirements pertaining to measuring systems, standards and test instrumentation; testifies in court as an expert witness on calibration procedures and accuracy of standards; evaluates, studies and recommends appropriate methods and

procedures of measurement in special applications such as moisture content, cryogenic liquid metering, volume of compressed gases, fossil and hydrocarbon fuel heating values and material densities; appraises the National Bureau of Standards of deficiencies in Bureau-supplied equipment, of added Laboratory capabilities, and of emerging new-technology needs of State laboratory programs.

5. Miscellaneous. Typical tasks: assists public and private sector users of standards and measuring equipment in solving measurement-related problems; conducts training and education programs for Department staff, other agency personnel and industry representatives on the proper selection, application, use, storage and recalibration of standards and related test equipment; speaks on metrology, statistical control principals, precision measurement and systems and units of weights and measures before general interest and technical group meetings.

IMPACT OF DECISIONS

The Metrologist makes decisions that directly impact the accuracy of measurement devices for products, commodities and services that are annually weighed or measured in Oregon by commercial and industrial firms, agencies and institutions.

RELATIONSHIPS WITH OTHERS

The Metrologist has regular daily telephone and in-person contact on technical code requirements with users of standards from both government and industry, representatives of scale and meter service firms, and public and private organizations involved with weighing and measuring systems and associated test equipment. Contacts by telephone or in-person about program needs are also periodically made with equipment vendors, service suppliers, metrology personnel from other states, and the staff of the National Bureau of Standards, U.S. Department of Commerce. Occasionally contacts are made on a wide variety of measurement related subjects, with the public and with enforcement agencies (Federal, State and local).

SUPERVISION RECEIVED

The Metrologist works under the Administrator of the Measurement Standards Division, who reviews the work of the Laboratory for conformity to Federal and State laws and Departmental goals and policies, and reviews progress of assigned programs and completed projects. The incumbent uses State laws, administrative rules and procedures, Federal guidelines, and agency and division policies in completing work assignments.

KNOWLEDGE, SKILLS, AND ABILITIES (KSA)

Extensive knowledge of systems of measurement and units of weights and measures.

Extensive knowledge of mathematics, physics and engineering mechanics related to metrology.

Extensive knowledge of statistics and principles of statistical quality and quantity control.

Extensive knowledge of principles and practices of mensuration and the determination of mass by gravimetric and non-gravimetric means in scientific, commercial and industrial environments.

Extensive knowledge of terminology used to describe or specify all types of weighing and measuring equipment, components, testing apparatus and instrumentation, their application and use.

Extensive knowledge of metrology laboratory operations, calibration and verification procedures for physical standards, environmental factors that adversely affect laboratory calibration work, and how to mitigate or avoid them.

Extensive knowledge of safety procedures for handling of flammable, caustic or corrosive liquids or compressed gases, wearing protective clothing, and the use of specialized safety equipment.

Extensive knowledge of the weights and measures laws, regulations and programs assigned to the division to enforce.

General knowledge of the U.S voluntary consensus standards system and the agencies and organizations that promulgate voluntary consensus standards within the United States, such as ASTM, ASME, API and NCWM, and how the standards of these organizations can solve measurement-related needs of the division and its clientele.

Skill in communicating technical information orally and in writing with a variety of people.

Skill in applying the principles of mathematics, physics and engineering mechanics to solve measurement or standards-related problems in scientific, commercial or industrial environments where quantities are weighed or measured.

Skill in evaluating laboratory results, sampling plans and statistical quality or quantity control data and in determining the nature and type of corrective action(s) required.

Skill in learning and implementing new procedures, new technology and new legal requirements.

Skill in understanding and applying relevant laws, rules and policies uniformly and effectively.

Skill in preparing and writing accurate and descriptive reports.

Skill in working without close supervision or assistance and in planning and scheduling laboratory activities and heavy capacity weighing device examinations.

Skill in applying tact and diplomacy with others to gain cooperation and compliance.

Skill in writing procurement specifications for standards and associated test equipment.

Skill in operating division precision test equipment, mass comparators, laboratory balances and related instruments.

Ability to safely lift and carry 50 pound mass standards in each hand.

Ability to work with acetone, alcohols, gasoline, diesel and other petroleum derivatives, caustics and corrosives, cryogenic liquids and compressed gases.

Ability to direct, assign and review work of technical staff and compare

work to established standards.

Ability to learn and apply agency administrative policies and procedures, laboratory rules and guidelines.

Ability to provide technical assistance on measurement technology and standards to industry and department staff.

Ability to coordinate and implement staff training.

Ability to speak effectively on metrology subjects as an expert witness in court or before general interest and technical group meetings.

SPECIAL QUALIFICATIONS

Must have appropriate Oregon (or equivalent) driver's license.

NOTE: The KNOWLEDGE and SKILLS are required for initial consideration. ABILITIES may be required for initial consideration, at any time during the selection process, or during a trial service period as a final stage of the selection process. Some duties performed by positions in this class may require different KSA's. No attempt is made to describe every KSA required for **all** positions in this class. Additional KSA requirements will be explained on the recruiting announcement.

Adopted 4/90

Revised

Examples of work are typical of duties assigned to this class. No attempt is made to describe every duty performed by all positions in this class.