

## STATE OF SOUTH DAKOTA CLASS SPECIFICATION

**Class Title: Metrologist**

**Class Code: 060296**

**Pay Grade: GJ**

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### **A. Purpose:**

Performs metrological tests and provides oversight for the function and operation of the South Dakota Metrology Laboratory by maintaining a quality measurement assurance program that provides universally accepted standards of measurements to calibrate Field Standards ensuring service providers have accurate measuring devices for their business and State Inspectors have accurate equipment to perform inspections.

### **B. Distinguishing Feature:**

Metrologists apply measurement science, mathematics, statistical analysis, and physics to develop, document, and maintain a quality measurement assurance program and to perform metrological test and calibrations on field standards to ensure service providers and State Inspectors have accurate equipment.

State Inspectors conduct a variety of inspections and investigate complaints of businesses and public facilities for various state agencies.

State Lead Inspectors oversee the daily operation of a remote office, provides work direction and technical assistance for at least three inspection staff, and conducts inspections.

### **C. Functions:**

*(These are examples only; any one position may not include all of the listed examples nor do the listed examples include all functions which may be found in positions of this class.)*

1. Provides oversight for the function and operation of the South Dakota Metrology Laboratory.
  - a. Maintains the reference standards issued by the National Institute of Science and Technology (NIST) and working standards purchased by South Dakota Metrology Laboratory.
  - b. Maintains South Dakota Metrology owned field and working standards, balances/load cells, and measuring equipment.
  - c. Ensures and schedules proper shipment and protection of state and customer owned standards for calibration purposes.
  - d. Provides administrative support for customers and state employees.
  - e. Facilitates the learning of other entities by providing metrology training
  - f. Maintains and proves quality measurements via Proficiency Testing.
2. Conducts highly specialist laboratory calibrations as required by statute.
  - a. Generates valid calibration reports on mass and volume artifacts submitted to the South Dakota Metrology Laboratory.
  - b. Operates and maintains a climate controlled environment.
  - c. Maintains quality control standards and documentation on calibrated instruments.
  - d. Conducts calibration measurements on check and field standards for mass and volume to ensure standards and calibration processes are in control.
  - e. Conducts special project and studies to ensure quality measurements.
  - f. Works with various components of cyber security to ensure data security and to maintain NIST certification.
3. Performs administrative oversight functions for the management of the South Dakota Metrology Laboratory.

- a. Evaluates current policy and laboratory function.
  - b. Researches and analyzes proposed policy, function, and guidelines to meet goals and challenges.
  - c. Assists with laboratory requests and expenditures to be in-line with agency and department goals and objectives.
4. Develops, maintains, and builds partnerships and influences change by serving as a state liaison to various state entities and other organizations.
- a. Represents the State Laboratory, Department of Public Safety, and the State of South Dakota by providing recommendations at meetings.
  - b. Participates in and provides perspective for state and national meetings pertaining to metrology and metrology laboratories.
  - c. Attends trainings at the regional and national level in order to stay up-to-date with changes in the Metrology field.
  - d. Serves as a state metrology liaison to various federal entities.
  - e. Participates in Department of Public Safety Priority Committees and participates as a member of planning teams.
5. Performs other work as assigned.

**D. Reporting Relationships:**

Reports to the Inspections and Weights and Measures Program Manager. Does not formally supervise, but may provide work direction to other staff for metrology related processes.

**E. Challenges and Problems:**

Challenges include maintaining measurement assurance in calibrations and documenting findings that could have legal implications; and maintaining standards that are required for South Dakota to maintain NIST certification. This includes trouble shooting and correcting technical issues that may arise as part of routine laboratory operations.

Problems include working with many service providers to ensure calibrations are completed accurately and in a timely manner. This is difficult because of the limited number of staff available to assist in the metrology laboratory.

**F. Decision-making Authority:**

Decisions made include when to service metrology equipment; scheduling of work based on laboratory availability, capability, and customer needs; decisions related to metrology laboratory programming; and decisions related to information needed to maintain NIST certification.

Decisions referred include final decision on budgets and purchases, decisions that affects relations with other state agencies that may draw the Metrology Laboratory into controversial situations; and decisions that draw national attention to South Dakota.

**G. Contact with Others:**

Daily contact with the public, facility owners and operators, state inspectors, and service providers to conduct calibrations and explain results; and weekly contact with the state agencies

having regulatory authority over the inspections for the interpretation of regulations and for technical assistance to complete inspections.

#### **H. Working Conditions:**

Typically works in the State Metrology Laboratory with routine exposure to items and equipment that are used by State Inspectors, service providers, and industry. Duties involve exposure to hazardous substances and combustible materials, and some heavy lifting. Frequently handles 50 lb. weights.

#### **I. Knowledge, Skills, and Abilities:**

Knowledge of:

- laws, statutes, rules, and policies pertaining to legal metrology and state inspections;
- web-based applications and computer programs including Microsoft Office;
- basic computer operations;
- complex algebraic and statistical evaluation methods and techniques;
- NIST Handbooks, NIST Field Examination Procedures Outlines, ISO/IEC 17025, and standard operating procedures;
- the principles of metrology;
- reporting methods and techniques;
- specifications and tolerances of the various classes of standards to ensure certification to their proper classes;
- legal evidence and enforcement procedures relative to work

Ability to:

- research, understand, and interpret statutes, rules, regulations, and policy applicable to state legal metrology;
- perform accurate and effective tests and calibrations;
- communicate effectively;
- understand database applications;
- deal tactfully with others;
- reference budget dollars and ensure consistent procedures and processes;
- comprehend technical narrative material including manuals, handbooks, and instructional memoranda for application to daily work;
- make decisions affecting public safety and well-being within the commerce community;
- plan, coordinate, and expedite work projects;
- maintain records, and prepare reports and correspondence related to the work;
- detect irregularities in the operation of weighing and measuring devices and systems;
- pass metrologist certification tests and/or other courses and modules conducted by the state, the National Institute of Standards and Technology or other training sources;
- train others in the work;
- provide effective project management;
- maintain favorable public relations.