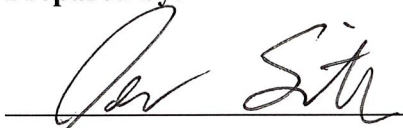


CONTROL OF INSPECTION, MEASURING AND TEST EQUIPMENT BSB 0100-07

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Date: 01/30/2023

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Date: 01/30/2023

BOILER SAFETY BUREAU

STANDARD OPERATING PROCEDURE MANUAL

1.0 PURPOSE and SCOPE

The purpose of this procedure sets forth requirements for the control of Boiler Safety Bureau (BSB or Bureau) inspection, measuring and test equipment (IM&TE) to provide assurance that measuring, and test equipment is properly controlled and in correct calibration. This procedure applies to all measuring and test equipment used in the performance of inspection services.

2.0 PERSONNEL RESPONSIBILITIES

- 2.1 The Bureau Chief has the overall responsibility for implementation and compliance with this section.
- 2.2 The Inspector Supervisors have the responsibility to verify that Deputy Inspectors are equipped with the necessary inspection, measuring and test equipment and that Deputy Inspectors are following this procedure.
- 2.3 Deputy Inspectors are responsible for using only equipment that is specified in this procedure and for ensuring that the equipment is in calibration prior to use.

3.0 HEALTH AND SAFETY ISSUES

Prior to entering any confined space, it is essential to test the atmosphere inside the confined space to prevent serious injury and/or death.

4.0 PROCEDURES

4.1 Calibration of the QRAE-3 multi-gas monitor

- 4.1.1 The QRAE-3 shall have a full calibration at least twice per year with a calibration gas bottle that has not exceeded the “best when used by” date on the bottle. The mixture in the bottle will have the following composition: 10 PPM Hydrogen Sulfide, 50 PPM Carbon monoxide, 2.5% Methane (50% LEL) and 18% oxygen. The balance gas will be nitrogen. (The full calibration procedures to be used can be found in Attachment 1 to this procedure.)
- 4.1.2 The QRAE-3 shall be bump tested periodically by the user with a provided calibration gas bottle. A bump test is defined as a brief exposure of the monitor to the calibration gas to show the sensor response and trigger the lowest alarm set point for each sensor. It is preferred that the calibration gas bottle has not exceeded the “best when used by” date, but it is acceptable to use a bottle that has exceeded the “best when used by” date. The bump test will be considered valid if the readings on the QRAE-3 monitor match the concentrations on the bottle. Readings that do not match the concentrations could indicate a faulty monitor or that the concentrations are

not correct. The QRAE-3 shall not be used to test the atmosphere of a confined space when the bump test is not successful.

- 4.1.3 The QRAE-3 may be sent to a vendor for repair and/or calibration when repairs and calibrations cannot be done by Bureau Personnel.
- 4.2 Calibration of the Krautkramer Model DM4E ultrasonic thickness testers will be done by Bureau personnel before every use in accordance with the manufacturer's instructions and with a known thickness on a calibrated testing block. (The calibration procedures can be found in Attachment 2 to this procedure.)
- 4.3 The Stress Tel- T-Mike Programmable ultrasonic thickness testers cannot be calibrated for thickness readings by Bureau personnel. The "Probe Zero" function shall be performed before each use. (The "Probe Zero" procedure can be found in Attachment 3 to this procedure.)
- 4.4 Calibration of the Reed Instruments Model TM-8811 ultrasonic thickness testers will be done by Bureau personnel before every use in accordance with the manufacturer's instructions with the 5mm calibration test block on the meter or a known thickness on a calibrated test block (The calibration procedures can be found in Attachment 4 of this procedure).

5.0 CUSTOMER SERVICE REQUIREMENTS

The purpose of following this procedure is to provide the customer, be it the public, employees of the Bureau, or other state agencies, with the most efficient service, information, training and assistance possible.

6.0 DATA AND RECORD MANAGEMENT

- 6.1 The records for calibrated equipment shall be kept by the Information Administrative Assistant I. Records include:
 - 6.1.1 UT Meter Assignment Log.
 - 6.1.2 QRAE Calibration/Issue Log.
 - 6.1.3 Calibration Certificates (for vendor calibration)
- 6.2 ***Records shall be maintained in accordance with the Functional Schedule for North Carolina State Agencies as adopted by State Archives, a Division of the North Carolina Department of Natural and Cultural Resources.***