University of California
Lawrence Livermore National Laboratory

NUCLEAR WASTE MANAGEMENT PROGRAM

CONTROLLED COPY NO. 0089

No.: 033-YMP-R 12

Revision: 0

Date: December 15, 1988

Page: 1 of 2

Subject: CONTROL OF MEASURING AND TEST EQUIPMENT

Approved: FEB 16 1989

Approved by: [signature] 12/22/88
Date
Yucca Mountain Project Leader

Approved by: [signature] 12/22/88
Date
Quality Assurance Manager

1.0 GENERAL

1.1 MAINTAINING ACCURACY OF EQUIPMENT

Measures are established to assure that tools, gages, instruments, and other measuring and test equipment used in activities that affect quality are properly controlled, calibrated, and adjusted at specified periods to maintain accuracy within necessary limits.

1.2 SCOPE OF CONTROL PROGRAM

The Quality Assurance Program Plan (QAPP) defines the scope and methodology of the program for the control of measuring and test equipment. This includes all measuring and test equipment or systems used to calibrate, measure, gage, test, or inspect either to control or to acquire data to verify conformance to a specified requirement, or to establish characteristics or values not previously known.

1.3 DESCRIPTION OF RESPONSIBILITIES

Responsibilities for the effective establishment, implementation and assurance of the calibration program are described.

2.0 PURPOSE OF EQUIPMENT

Measuring and test equipment are devices or systems used to calibrate, measure, gage, test, or inspect either to control or to acquire data to verify conformance to a specified requirement, or to establish characteristics or values not previously known.

Specific requirements for control of measuring and test equipment are listed below:

1 SELECTION

Selection of measuring and test equipment is controlled to assure that such equipment is of proper type, range, and accuracy to accomplish the function of determining conformance to specified requirements. The type, range, accuracy and tolerance of a measuring device are specified in test and inspection procedures. Each device has a unique identification number. This number is recorded on the data sheet, log, etc., along with the measurement taken, to assure traceability to the measurement of the device that was used to take the measurement.

2.2 CALIBRATION

Measuring and test equipment is calibrated against certified equipment having known valid relationships to the National Bureau of Standards or other nationally recognized standards and is calibrated, adjusted, and maintained at prescribed intervals. If no nationally recognized standards exist, the basis for calibration is documented. Calibration standards have equal or greater accuracy than equipment being calibrated. Calibration standards with the same accuracy may be used if it can be shown to be adequate for the requirements and the basis of acceptance is documented and authorized by responsible management. The management authorized to perform this function is identified.

2.3 CONTROL

e method and interval of calibration for each item is defined, based on the ype of equipment, stability, characteristics, required accuracy, precision, intended use, degree of usage, and other conditions that affect measurement control. Measuring and test equipment is labeled, tagged, or otherwise documented in a fashion which indicates the due date of the next calibration and to provide traceability to calibration data. If measuring and test equipment is found to be out of calibration, an evaluation is made and documented of the validity of previous results obtained and of the acceptability of items previously inspected, tested or data gathered since the last calibration. Devices that are out of calibration are tagged or segregated and are not used until they have been recalibrated. If any measuring or test equipment is found to be out of calibration consistently then it is repaired or replaced. Calibration is performed when the accuracy of equipment is suspect.

2.4 COMMERCIAL DEVICES

Calibration and control measures are not required for rulers, tape measures, levels, and other such devices, if normal commercial equipment provides adequate accuracy.

2.5 HANDLING AND STORAGE

Measuring and test equipment are handled properly and stored to maintain accuracy.

6 RECORDS

Records are maintained and equipment is marked suitably to indicate calibration status. Calibration records identify the calibration procedure (including revision) utilized to perform the calibration.