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1. TRACEABILITY OF CALIBRATIONS

Traceability of Calibrations:

Calibrations shall be regarded as being traceable if the calibrations are done by following the requirements of ISO/IEC 17025, General requirements for the competence of testing and calibration laboratories, and by one of the following:

(1) The instrument was calibrated by a National Metrology Institute.

(2) The instrument was calibrated by an ISO/IEC 17025 accredited calibration laboratory.

(3) The instrument was calibrated by an internal or external calibration laboratory assessed on an annual basis, by the CBTL or NCB, and found to comply with the requirements of ISO/IEC 17025. The assessments shall be conducted by a qualified ISO/IEC 17025 assessor or metrologist.

Note to Item (3) - An external calibration laboratory that is not accredited should only be used in the event the an accredited calibration laboratory is not available or practical to use.

Exception to (1), (2) and (3) - For specialized instruments where no accredited calibration laboratory is available, the instrument may be calibrated by the instrument manufacturer provided that the calibration standards used are traceable to national or international units of measure, the traceability chain is identified and an estimation of uncertainty of measurement is included on the calibration certificate.

Calibrations shall be made by an unbroken chain of comparisons to:

(A) Units of measure of The International System of Units (SI).

(B) Fundamental physical constants

(C) Certified Reference Materials, in the event that (A) and (B) do not exist for the measurement property.

2. CALIBRATION INTERVALS FOR TEST EQUIPMENT REQUIRING CALIBRATION

Calibration Intervals for Test Equipment Requiring Calibration:

All test equipment requiring calibration shall undergo an initial calibration before being put into service. Thereafter, the maximum nominal calibration interval shall be:

(1) One year for electrical, electronic and mechanical test equipment.
(2) Three years for mechanical test equipment made of solid materials not subject to deterioration.
(3) As recommended by the manufacturer of the instrument.
(4) Test equipment that is "fail safe" in that failure would be evident to a user (with laboratory procedures requiring the user to check the equipment before use) may be put on the status of "Initial Calibration Only (ICO)". Examples of the equipment that can be placed on ICO status are: steel rules, tape measures, weights 4,5 kg or more calibrated to +/-1% tolerance, single piece steel probes greater than or equal to 3 mm diameter with blunt ends, graduate cylinder, thermometers, steel impact balls, steel or plastic probes with no moving parts and sufficient structural integrity so as to not deform.

Note (informative) - Concept of Initial Calibration Only test equipment can be found in NCSL RP-1 Chapter 8.

Weights do not need to be calibrated if verified with a calibrated scale before each use. The verification must be documented.

Test equipment that is delicate, subject to frequent usage or severe use conditions shall be assigned shortened calibration intervals (e.g. 6 months, 3 months, weekly, before each use).

Infrequently used test equipment may be assigned the status of "calibrate before use" instead of a periodic calibration.

Calibration intervals may be extended based on the following and the reasons must be documented:

(A) Passive electrical test equipment, such as current shunts, current transformers, potential transformers, may be extended to 3 years with good results for the initial calibration period and if not subject to severe use conditions.

(B) Weights may be extended from 3 years to 5 years if the weights are verified at least on an annual basis with the verification documented.

(C) Where there is sufficient calibration data to statistically establish a trend or based on experience of use of the test equipment to assure good measurement results for a longer period.

Note (informative) - See NCSL RP-1, Establishment and adjustment of calibration intervals, January 1996, for guidance.