

# **Master List**

## **Externally Generated Metrology Publications**

This master list shall facilitate the uniform utilization of controlled documents, practices, and procedures by the metrology laboratory personnel. Exceptions, deviations, and additions are stated where appropriate. The following documents have been adopted and authorized for use by the Laboratory Manager.

### **Management System**

Asia Pacific Laboratory Accreditation Cooperation (APLAC) SEC 045, Procedure for Management Review and Internal Audits, Issue No. 4, July 2006.

APLAC TC 002, Internal Audits for Laboratories and Inspection Bodies, Issue No. 3, May 2006.

APLAC TC 003, Management Review for Laboratories and Inspection Bodies, Issue No. 3, May 2006.

International Organization of Legal Metrology (OIML), International Vocabulary of Terms in Legal Metrology (VIML), 2000.

International Organization for Standardization/International Electrotechnical Commission (ISO/IEC) 17025, General Requirements for the Competence of Testing and Calibration Laboratories, 2005.

International Vocabulary of Basic and General Terms in Metrology (VIM), BIPM, IEC, IFCC, ISO, IUPAC, IUPAP, OIML, Definition 6.10, 2<sup>nd</sup> ed., 1993.

National Institute of Standards and Technology (NIST) Handbook (HB) 143, State Weights and Measures Laboratories Program Handbook, April 2007.

NIST HB 150, National Voluntary Laboratory Accreditation Program (NVLAP) Procedures and General Requirements, 2006.

State Statute for Legal Authorization  
State Records Manual and/or Disposition Schedule  
State Open Records Legislation, Policy and Procedure  
State Ethics Rules

# Technical System

## General

National Conference of Standards Laboratories International (NCSLI), Position on Purpose and Appropriate Use of NIST Test Report Numbers, May 1996.

NCSLI RP-7, Recommended Practice Laboratory Design, November 2000.

NCSLI RP-13, Recommended Practice Computer Systems in Metrology, February 1996.

NCSLI RP-15, Recommended Practice Interlaboratory Comparisons, August 2005.

NISTIR 7214, Weights and Measures Division Quality Manual for Proficiency Testing and Interlaboratory Comparisons, March 2005. **NOTE:** Controlled versions of PT management system are posted at <http://ts.nist.gov/WeightsAndMeasures/Metrology/roundrobins.cfm>

NISTIR 7802, Proficiency Test Policy and Plan for State Weights & Measures Laboratories, January 2004. **NOTE:** Controlled versions of PT management system are posted at <http://ts.nist.gov/WeightsAndMeasures/Metrology/roundrobins.cfm>

NIST SP 330, The International System of Units (SI), 2001.

NIST SP 811, Guide for the Use of the International System of Units, The Modernized Metric System, 1995.

NIST SP 1038, The International System of Units (SI) – Conversion Factors for General Use, 2006.

## Uncertainty

ISO Guide 98, Guide to the Expression of Uncertainty in Measurement, 1995.

National Conference of Standards Laboratories (NCSL) Workshop and Symposium, Implementation of the Guide to the Expression of Uncertainty in Measurement for State Calibration Laboratories, 1994.

ANSI/NCSLI Z540.1-1994 (R2002), American National Standard for Calibration – U. S. Guide to the Expression of Uncertainty in Measurement, 2002.

NIST Technical Note 1297, Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results, 1994.

SOP 29 Standard Operating Procedure for the Assignment of Uncertainty, March 2003. **NOTE:** Published as part of NISTIR 6969.

## **Recognition and Accreditation**

American National Standards Institute/National Conference of Standards Laboratories (ANSI/NCSL) Z540.3-2006, American National Standard for Calibration- Requirements for the Calibration of Measuring and Test Equipment, 2006.

ILAC P-10:2002, ILAC Policy on Traceability of Measurement Results, 2002.

NIST HB 143, State Weights and Measures Laboratories Program Handbook, April, 2007.

NIST HB 150-2F, NVLAP Calibration Laboratories Technical Guide for Dimensional Measurements, September 2003.

NIST HB 150-2G, NVLAP Calibration Laboratories Technical Guide for Mechanical Measurements, March 2004.

NIST HB 150-2H NVLAP Calibration Laboratories Technical Guide for Thermodynamic Measurements, February 2004.

NIST HB 150-2C, NVLAP Calibration Laboratories Technical Guide for Time & Frequency, September 2001.

NISTIR 7028, Type Evaluation Laboratory Quality Manual Template Developed for U.S. Type Evaluation Laboratories, July 2003.

NIST Policy on Traceability. **NOTE:** Posted at <http://ts.nist.gov/traceability/>

## **Tolerance, Design, and Materials**

ASTM E-617-97, Standard Specification for Laboratory Weights and Precision Mass Standards, March 1998.

GGG-T-106F, Federal Specifications for Measuring Tapes, April 1993.

NIST HB 44, Specifications, Tolerances, and other Technical Requirements for Weighing and Measuring Devices, 2007 Edition, October 2006.

NIST HB 105-1, Specifications and Tolerances for Field Standard Weights, May 1990.

NIST HB 105-2, Specifications and Tolerances for Field Standard Measuring Flasks, April 1996.

NIST HB 105-3, Specifications and Tolerances for Graduated Neck Type Volumetric Field Standards, June 1997.

NIST HB 105-4, Specifications and Tolerances for Liquefied Petroleum Gas and Anhydrous Ammonia Liquid Volumetric Provers, June 1997.

NIST HB 105-5, Specifications and Tolerances for Field Standard Stopwatches, October 1997.

NIST HB 105-6, Specifications and Tolerances for Thermometers, October 1997.

NIST HB 105-7, Specifications and Tolerances for Dynamic Small Volume Provers, June 1997.

NIST HB 105-8, Specifications and Tolerances for Field Standard Weight Carts, October 2003.

OIML R 35, Material Measures of Length for General Use, 1985.

OIML R111-1, Weights of Classes E1, E2, F1, F2, M1, M1-2, M2, M2-3, and M3. Part 1: Metrological and technical requirements, 2004.

OIML R129, Multi-dimensional Measuring Instruments, 2000.

## **Calibration Scope**

ILAC-G9:2005, Guidelines for the Selection and Use of Reference Materials, 2005.

National Bureau of Standards (NBS) Technical Note 952, Designs for the Calibration of Standards of Mass, June 1977. **NOTE:** Published as a part of NISTIR 4941.

NIST/SEMATECH e-Handbook of Statistical Methods,  
<http://www.itl.nist.gov/div898/handbook/>, May 24, 2007

NIST HB 145, Handbook for the Quality Assurance of Metrological Measurements, November 1986.

NISTIR 4941, Selected Publications for the Advanced Mass Workshop, November 1992.

NISTIR 5672, Advanced Mass Calibration and Measurement Assurance Program for State Calibration Laboratories, March 2005.

NISTIR 6176, Process Measurement Assurance Program for State Metrology Laboratories, June 1998.

NISTIR 6969, Selected Laboratory and Measurement Practices and Procedures to Support Basic Mass Calibrations, March 2003. **NOTE:** Individual Documents are updated independently and will have more recent version dates.

SOP 33, Standard Operating Procedure for Weight Carts. **NOTE:** Posted at  
<http://ts.nist.gov/WeightsAndMeasures/Metrology/SOP33Part1.cfm>

NISTIR 7383, Selected Procedures for Volumetric Calibrations, November 2006. **NOTE:** Individual Documents are updated independently and will have more recent version dates.

NIST SP 250 – 31, NIST Measurement Services, Mass Calibrations, January 1989.

NIST SP 250 – 72, NIST Calibration Services for Liquid Volume, March 2006.

NIST SP 960-12, Stopwatch and Timer Calibrations, May 2004.

NIST SP 960-14, WWVB Radio Controlled Clocks: Recommended Practices for Manufacturers and Consumers, December 2005.

NIST Tech Memo No 99-1, Weights and Measures Tech Memo, April 1999.