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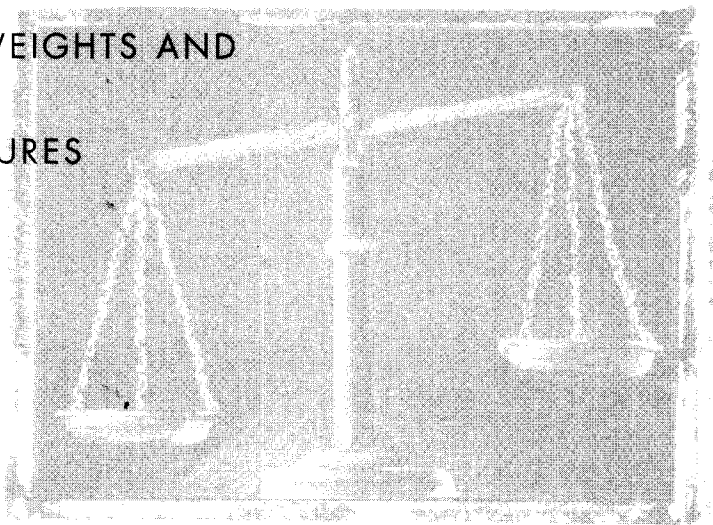
United States
Department of
Commerce

Technology
Administration

National
Institute of
Standards and
Technology

REPORT OF THE 84TH NATIONAL CONFERENCE

ON WEIGHTS AND MEASURES



as adopted by the 84th
National Conference on
Weights and Measures 1999

NIST Special
Publication **942**

1999



Report of the 84th National Conference on Weights and Measures

Sponsored by the National Institute of Standards and Technology (NIST)

Attended by Officials from the Various States, Counties, and Cities, and
Representatives from U.S. Government, Industry, and Consumer Organizations

Burlington, Vermont - July 25 - 29, 1999

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Technology Administration
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Secretary for Technology
National Institute of Standards
and Technology
Raymond G. Kammer, Director

NIST
Special Publication **942**

November 1999

Abstract

The 84th Annual Meeting of the National Conference on Weights and Measures (NCWM) was held July 25 through 29, 1999, at the Sheraton Burlington Hotel & Conference Center in Burlington, Vermont. The theme of the meeting was "Setting Standards of Excellence in Pursuit of Equity."

Reports by the Standing and Annual Committees of the Conference constitute the major portion of this publication, along with the addresses delivered by Conference officials and other authorities from government and industry.

Special meetings included those of Meter Manufacturers Association, Gasoline Pump Manufacturers Association, Industry Committee on Packaging and Labeling, Associate Membership Committee, and Metrology Subcommittee.

Key words: grain moisture; legal metrology; meters; scales; specifications and tolerances; training; type evaluation; uniform laws, weights and measures.

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Note: The policy of the National Institute of Standards and Technology is to use metric units of measurement in all of its publications. In this publication, however, recommendations received by the NCWM technical committees have been printed as they were submitted and, therefore, may contain references to inch-pound units. Opinions expressed in non-NIST papers are those of the authors and not necessarily those of the National Institute of Standards and Technology. Non-NIST speakers are solely responsible for the content and quality of their material.

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Past Chairmen of the Conference

| Conference | Year | Chairman |
|------------|------|-------------------------------------|
| 43rd | 1958 | J. P. McBride, MA |
| 44th | 1959 | C. M. Fuller, CA |
| 45th | 1960 | H. E. Crawford, FL |
| 46th | 1961 | R. E. Meek, IN |
| 47th | 1962 | Robert Williams, NY |
| 48th | 1963 | C. H. Stender, SC |
| 49th | 1964 | D. M. Turnbull, WA |
| 50th | 1965 | V. D. Campbell, OH |
| 51st | 1966 | J. F. True, KS |
| 52nd | 1967 | J. E. Bowen, MA |
| 53rd | 1968 | C. C. Morgan, IN |
| 54th | 1969 | S. H. Christie, NJ |
| 55th | 1970 | R. W. Searles, OH |
| 56th | 1971 | M. Jennings, TN |
| 57th | 1972 | E. H. Black, CA |
| 58th | 1973 | George L. Johnson, KY |
| 59th | 1974 | John H. Lewis, WA |
| 60th | 1975 | Sydney D. Andrews, FL |
| 61st | 1976 | Richard L. Thompson, MD |
| 62nd | 1977 | Earl Prideaux, CO |
| 63rd | 1978 | James F. Lyles, VA |
| 64th | 1979 | Kendrick J. Simila, OR |
| 65th | 1980 | Charles H. Vincent, TX |
| 66th | 1981 | Edward H. Stadolnik, MA |
| 67th | 1982 | Edward C. Heffron, MI |
| 68th | 1983 | Charles H. Greene, NM |
| 69th | 1984 | Sam F. Hindsman, AR |
| 70th | 1985 | Ezio F. Delfino, CA |
| 71st | 1986 | George E. Mattimoe, HI |
| 72nd | 1987 | Frank C. Nagele, MI |
| 73rd | 1988 | Darrell A. Guensler, CA |
| 74th | 1989 | John J. Bartfai, NY |
| 75th | 1990 | Fred A. Gerk, NM |
| 76th | 1991 | N. David Smith, NC |
| 77th | 1992 | Sidney A. Colbrook, IL |
| 78th | 1993 | Allan M. Nelson, CT |
| 79th | 1994 | Thomas F. Geiler, MA |
| 80th | 1995 | James C. Truex, OH |
| 81st | 1996 | Charles A. Gardner, Suffolk Co., NY |
| 82nd | 1997 | Barbara J. Bloch, CA |
| 83rd | 1998 | Steven A. Malone, NE |

The following State Representatives were present and voted on reports presented by the Conference Standing and Special Purpose Committees.

1999 STATE VOTING REPRESENTATIVES AND ALTERNATES

| State | Representative | Alternate |
|----------------------|-----------------------|--------------------|
| Alabama | Charles A. Burns, Jr. | None |
| Alaska | Aves D. Thompson | None |
| American Samoa | None | None |
| Arizona | Dennis E. Ehrhart | Kelleen K. Larson |
| Arkansas | Mike Hile | Bill Sullivant |
| California | Barbara Bloch | Dennis Johannes |
| Colorado | David R. Wallace | None |
| Connecticut | Raymond Kalentkowski | None |
| Delaware | William Lagemann | None |
| District of Columbia | Jeffrey Mason | None |
| Florida | Maxwell H. Gray | Jack Jeffries |
| Georgia | Jerry Flanders | Curt Williams |
| Guam | None | None |
| Hawaii | None | None |
| Idaho | Tom Schafer | Kevin Merritt |
| Illinois | Sid Colbrook | Richard Philmon |
| Indiana | Larry Stump | Michelle Phillips |
| Iowa | Darryl Brown | None |
| Kansas | Maureen Henzler | None |
| Kentucky | Larry W. Hatfield | Randy Wise |
| Louisiana | None | None |
| Maine | David E. Gagnon | Danny Newcombe |
| Maryland | Louis E. Straub | Richard W. Wothlie |
| Massachusetts | Charles H. Carroll | None |
| Michigan | Patrick J. Mercer | Michael Pinagel |
| Minnesota | Bruce Adams | Mark Buccelli |

State Voting Representatives

| State | Representative | Alternate |
|----------------|---------------------|------------------------|
| Mississippi | Rusty Robbins | None |
| Missouri | Roy Humphreys | Ronald G. Hayes |
| Montana | Jack Kane | None |
| Nebraska | Steve Malone | Don Onwiler |
| Nevada | None | None |
| New Hampshire | Mike Grenier | Richard Cote |
| New Jersey | Louis Greenleaf | Pat Pasquale |
| New Mexico | Gary D. West | Joe E. Gomez |
| New York | Ross J. Andersen | Michael Sikula |
| North Carolina | N. David Smith | Ron Murdock |
| North Dakota | None | None |
| Ohio | Leonard J. Hubert | Jim Truex |
| Oklahoma | Charles Carter | Ken Fraley |
| Oregon | George Shefcheck | Clark Cooney |
| Pennsylvania | Charles M. Bruckner | None |
| Puerto Rico | Jose Torres-Ferrer | Rafael Santiago Negron |
| Rhode Island | None | None |
| South Carolina | Carol P. Fulmer | None |
| South Dakota | Joe Hjermstad | Ralph Bush |
| Tennessee | Robert Williams | Randy Jennings |
| Texas | Damon Slaydon | Pat Forester |
| Utah | David O. McKay | Kyle R. Stephens |
| Vermont | Bruce A. Martell | None |
| Virginia | J. Alan Rogers | G. Wes Diggs |
| Virgin Islands | None | None |
| Washington | Gerald A. Buendel | None |
| West Virginia | Karl Angell | None |
| Wisconsin | Mark Nickel | None |
| Wyoming | None | None |

National Conference on Weights and Measures Organization Chart 1998-1999

| Board of Directors (BOD) | | | |
|---|--|--|------------------------------------|
| Office/Representation | Name & Affiliation | Term Ends | |
| Chairman: | A. Thompson, AK* | | |
| Chairman-Elect: | G.W. Diggs, VA* | | |
| Past Chair/NTEP Committee Chair: | S. Malone, NE* | | |
| Treasurer: | J. A. Rogers, VA* | | |
| Active Membership/Northeastern | C. Carroll, MA* | 1999 | |
| Active Membership/Central | B. DeSalvo, OH* | 2000 | |
| Active Membership/Southern | M. Hile, AR* | 2003 | |
| Active Membership/Western | G. West, NM* | 2002 | |
| At-Large | M. Pinagel, MI | 2003 | |
| At-Large | L. Straub, MD | 2001 | |
| Associate Membership | R. Davis, Fort James Corporation | 2001 | |
| *National Type Evaluation Program (NTEP) Committee Member | | | |
| See Working Groups, Subcommittees, and Special Committees of the BOD after the Standing Committees. | | | |
| Honorary NCWM President: | R. Kammer, NIST Director | | |
| NCWM Executive Secretary: | G. Ugiansky, NIST Office of Weights and Measures | | |
| BOD Advisors: | J. Koenig, NIST Office of Weights and Measures | | |
| | B. Palys, CAE, Executive Director, NCWM Headquarters | | |
| | G. Vinet, Canada | | |
| NTEP Committee Technical Advisor: | T. Butcher, NIST Office of Weights and Measures | | |
| | | | |
| Laws & Regulations Committee | | Specifications & Tolerances Committee | |
| Chairman: | K. Angell, WV (1) | Chairman: | D. Brown, IA (1) |
| Members: | R. Andersen, NY (4) | Members: | M. Coyne, Brockton, MA (4) |
| | S. Morrison, San Luis Obispo Co., CA (2) | | M. Hopper, Kern Co.,CA (2) |
| | D. Onwiler, NE (5) | | G. Shefcheck, OR (3) |
| | R. Williams, TN (3) | | R.W. Wothlie, MD (5) |
| NIST Technical Advisor: | T. Coleman | NIST Technical Advisor: | J. Williams |
| Canadian Tech. Advisor: | J. Watters | Canadian Tech. Advisor: | T. Kingsbury |
| Associate Member Rep.: | C. Guay, Procter & Gamble Co. | Multiple Dimension Measuring Devices Working Group | |
| Petroleum Subcommittee Chairman & Technical Advisor: | R. Jennings, TN | Chair: | C. Skonberg, United Parcel Service |
| | | Technical Advisor: | R. Suiter, NIST |
| NIST Handbook 133 Working Group | | | |
| Chairman: | B. Bloch, CA | | |

Organization Chart

| | |
|--|--|
| <p align="center">Administration & Public Affairs Committee</p> <p>Chairman: R. Greek, San Luis Obispo Co., CA (1)</p> <p>Members: J. Flanders, GA (4) D. Frieders, San Francisco Co., CA (5) L. Greenleaf, NJ (2) R. Philmon, IL (3)</p> <p>NIST Technical Advisor: J. Ross</p> <p>Associate Member Rep.: J. Wollner, Nestle USA</p> <p>NCWM Safety Liaison: C. Gardner, Suffolk Co., NY</p> <p>Voluntary Program Assessment Working Group</p> <p>Chairman: S. Colbrook, IL</p> | |
| <p align="center">Metrology Subcommittee</p> <p>Chairman: R. Balaze, MI Vice Chairman: K. Fraley, OK</p> <p>Members: L. F. Eason, NC J. Rothleder, CA D. Newcombe, ME J. Torres, PR</p> <p>Technical Advisor: G. Harris, NIST</p> | <p align="center">Nominating Committee</p> <p>Chairman: S. Malone, NE Members: B. Bloch, CA S. Colbrook, IL C. Gardner, Suffolk Co., NY T. Geiler, Barnstable, MA N. D. Smith, NC J. Truex, OH</p> |
| <p align="center">Legislative Liaison</p> <p>W. Corey, American Frozen Foods T. Geiler, Barnstable, MA N. D. Smith, NC</p> | <p align="center">Resolutions Committee</p> <p>Chairman: J. Tillson, MS (2) Members: R. Alviene, NJ (1) C. Kloos, Colgate-Palmolive (3)</p> <p>Coordinator: J. Mindte, NIST</p> |
| <p align="center">Credentials Committee</p> <p>Chairman: J. Kane, MT (1) Members: H. Hochstetler, Elkhart Co., IN (2) T. Lori, NJ (3)</p> <p>Coordinator: J. Mindte, NIST</p> | <p align="center">Other Appointed Officers</p> <p>Parliamentarian: B. Adams, MN Chaplain: M. Hile, AR Sergeants-At-Arms: J. Cameron, VT M. Paquette, VT Presiding Officers: D. Ehrhart, AZ R. Kalentkowski, CT V. Massey, Shelby Co., TN D. Onwiler, NE</p> |

Associate Membership Committee

Chairman: G. Prince, The Kroger Company
 Vice Chair: F. Holland, Schlumberger Technologies
 Secretary/
 Treasurer: C. Frye, International Dairy Foods
 Association
 Members: J. Baker, Pier 1 Imports
 D. Cook, Kraft Foods, Inc.
 D. Flocken, Mettler-Toledo
 C. Guay, Procter & Gamble Company
 C. Kloos, Colgate-Palmolive Company
 D. Quinn, Fairbanks Scales
 P. Zalon, Nestle USA

**Regional Weights and Measures Association Contacts
 for Membership Information**

| | |
|---|---|
| Northeastern Weights and Measures Assn.(NEWMA): | William Wilson, Clinton Co., NY, Secretary |
| Southern Weights and Measures Assn. (SWMA): | N. David Smith, NC, Secretary/Treasurer |
| Central Weights and Measures Assn. (CWMA): | Renee Osterkamp, SD, Executive Secretary |
| Western Weights and Measures Assn. (WWMA): | Charles Green, NM - Retired, Secretary/Treasurer 840 Camino Del Rex Las Cruces, NM 88001 Telephone: 505-523-0730 |

| National Type Evaluation Program Technical Committee | |
|---|---|
| <p>Weighing Sector</p> <p>Chair: N. Mills, Hobart Corporation</p> <p>Technical Advisor: D. Suiter, NIST</p> <p>Public Sector Members:</p> <ul style="list-style-type: none"> R. Andersen, NY A. Buie, MD T. Butcher, NIST C. Carter, OK S. Cook, CA G. W. Diggs, VA D. Onwiler, NE R. Pforr, GIPSA D. Ripley, NIST G. Shefcheck, OR J. Truex, OH L. Turberville, AL J. Vanderwielen, GIPSA J. Watters, Canada K. Yee, NIST <p>Private Sector Members:</p> <ul style="list-style-type: none"> J. Antkowiak, Hottinger Baldwin Measurements W. Brasher, Southern Company Services, Inc. L. Burrow, Sensortronics L. Cerny, Association of American Railroads J. Elengo, Contractor D. Flocken, Mettler-Toledo, Inc. W. GeMeiner, Union Pacific RR W. Goodpaster, Cardinal/Detecto K. Haker, BLH Electronics D. Hawkins, Fancor, Inc. J. Hughes, Weigh-Tronix, Inc. D. Krueger, NCR G. Lameris, Hobart Corporation H. Lockery, Lockery Assoc. T. Luna, Scales Unlimited, Inc. L. E. Luthy, Brechbuhler Scales, Inc. V. Pandit, Allegany Technology, Inc. D. Tonini, Scale Manufacturers Association J. Wang, A&D Engineering, Inc. O. Warnlof, Consultant R. Watts, Universal Epsco, Inc. | <p>Measuring Sector</p> <p>Chair: R. Tucker, Tokheim Corporation</p> <p>Technical Advisor: T. Ahrens, NIST</p> <p>Public Sector Members:</p> <ul style="list-style-type: none"> R. Andersen, NY T. Butcher, NIST S. Cook, CA S. Hadder, FL T. Kingsbury, Canada S. Malone, NE R. Murdock, NC D. Ripley, NIST W. West, OH R. Wothlie, MD <p>Private Sector Members:</p> <ul style="list-style-type: none"> R. B. Beahm, Krohne, Inc. F. M. Belue, Belue Associates G. Bugher, Endress + Hauser R. Cooper, Schlumberger (Neptune) C. Eskind, Shell Oil Company/API R. Fonger, Bennett Pump Co. M. Hankel, MCH Engineering Associates, Inc. K. Hoffer, Hoffer Flow Controls, Inc. F. Holland, Schlumberger Technologies R. Huff, Universal Epsco, Inc. D. Joines, Dresser Wayne G. Johnson, Gilbarco, Inc. M. Keilty, Micro Motion, Inc. D. Krueger, NCR W. Mattar, The Foxboro Co. A. Noel, Schlumberger Industries J. Skuce, Smith Meter, Inc. D. Smith, Gasboy International, Inc. R. Traettino, Liquid Controls Corp. O. Warnlof, Consultant K. White, Brooks Instrument Div. M. Woiton, Endress & Hauser |


| | |
|--|--|
| <p>Belt Conveyor Scales Sector</p> <p>Chair: N. Johnson, Merrick Corporation</p> <p>Technical Advisor: T. Ahrens, NIST</p> <p>Public Sector Members: A. Buie, MD T. Butcher, NIST S. Cook, CA R. Miller, CO D. Ripley, NIST L. Turberville, AL</p> <p>Private Sector Members: K. Alexeff, Stock Equipment Co. W. Brasher, Southern Co. Services G. Burger, Consultant L. Burrow, Sensortronics M. Casanova, Ramsey Technology L. Cerny, Association of American Railroads P. Chase, Chase Technology, Inc. D. Cockrell, Consultant R. DeSollar, Central Illinois Public Service Company R. Dietrich, Kaskaskia Valley Scale S. Hawkins, ABC Scale T. Johnson, Sensortronics K. Knapp, Milltronics F. Joe Loyd, CSX Transportation J. Oliver, Virginia Power N. Ortyl, III, Dresser Industries B. Ripka, Ramsey Technology, Inc. P. Sanford, Thayer Scale D. Tonini, Scale Manufacturers Association T. Vormittag, Sr, Commercial Testing & Engineering Co. O. Warnlof, Consultant</p> | <p>Grain Moisture Meter Sector and Near-Infrared Protein Analyzer Sector</p> <p>Chair: R.W. Wotthlie, MD</p> <p>Technical Advisor: J. W. Barber, J B Associates</p> <p>Public Sector Members: Canadian Grain Commission R. Burns, AR D. Funk, GIPSA G. D. Lee, NIST D. Onwiler, NE R. Pierce, GIPSA D. Ripley, NIST J. Rothleder, CA C. Tew, NC R. Wittenberger, MO</p> <p>Private Sector Members: J. Bair, Millers National Federation T. Conwell, CSC Scientific Company, Inc. M. Clements, The Steinlite Corp. C. Eigenmann, DICKEY-john Corp. M. Hall, Sartorius Instruments C. Hurburgh, Jr., Iowa State University D. Krejci, Grain Elevator & Processing Society* R. Oberg, Zeltex, Inc. T. O'Connor, National Grain & Feed Association O. Rasmussen, Foss North America, Inc.* T. Runyon, Seedboro Equipment F. Seeber, Shore Sales Co., Grain Elevator & Processors Society C. Watson, Consultant H. Yamahira, Kett Electric Laboratory</p> <p>*(Grain Moisture Meter Sector only)</p> |
|--|--|

President's Address

Mr. Raymond Kammer, Director of the National Institute of Standards and Technology and Honorary President of the National Conference on Weights and Measures, addressed the Conference July 27, 1999, at the General Session. He presented the following slides during his address. (Note: Some of the graphics in the slides have been removed because they could not be properly viewed in this format.) Mr. Kammer spoke from notes, and his remarks were not recorded; therefore, a complete text copy of his remarks was not available for this publication.

National Institute of Standards and Technology

NIST strengthens the economy and improves the quality of life by working with industry to develop and apply technology, measurements, and standards through...



Helping America Measure Up

NIST

- 3300 employees
- \$700 million annual budget
- 1200 industrial partners
- 2000 field agents
- 1500 guest researchers
- \$1.4 billion co-funding of industry R&D
- national measurement standards

U.S. Department of Commerce
Technology Administration

5 Challenges for NIST

- Best in the World Measurement Challenge;
- Standards Challenge to support full U.S. participation in global markets;
- Building consensus for the Advanced Technology Program;
- Expanding access to Manufacturing Extension Partnership services for more small and mid-sized companies;
- Promoting performance excellence in healthcare and education through the Baldrige National Quality Program

Challenge 1: Ensure that U.S. industry has the best measurements and standards in the world.

The Four Questions

- What measurements and standards are needed by industry and the nation, now and in the future?
- How well are we meeting these needs?
- How does our performance compare to the best in the world?
- What could we do to be or remain at the pinnacle of the field?

Best in the World Series

- Temperature
- Mass
- Time & Frequency
- Magnetic Materials
- Capacitance
- Modeling & Simulation
- Force
- Moie
- Radio-frequency
- Fire Suppressant Performance
- Ionizing Radiation & Radioactivity
- Current & Voltage
- International Comparisons
- Length
- Parallel Processing
- Candela & Optical Power
- Neutron Measurements


International Standards

- Standards Summit - September 23, 1998
 - Support for ANSI
 - Towards a National Standards Strategy NISTIR 6259
- SIMnet Workshop and Conference
 - December 2-4, 1998
 - Ambassador Level
- Conformity Assessment Workshop
 - February 9, 1999

State Pilot Program - Maine

New State Focus: Maine Pilot
Increase NIST partnerships with the States
Improve the efficiency and effectiveness of NIST

Letter of Partnership - June 10, 1999
NIST and the State of Maine



Maine Weights and Measures Initiative

- Metrology Project
- Instructor Training for Maine Officials

Advancing Weights and Measures

- New technologies
- Funding
- Accreditation for state metrology labs
- Restructuring NTEP
- Parcel Shipping Scales Workshop

New Technologies

- National Type Evaluation Program
Certificates on the Internet
– www.nist.gov/ntep

MEASUREnet

- MEASUREnet
 - Internet based
 - training and collaborations
 - technical assistance
- Mass Interlaboratory Comparisons

State Pivot Laboratories

- State Pivot Labs
 - California
 - Minnesota
 - Oklahoma
 - Maine
 - North Carolina
 - Puerto Rico
 - Idaho
 - Michigan
 - Arizona
 - Connecticut
 - Georgia

Metrology Laboratory Accreditation

- 9 states have applied; 2 of these, Minnesota and Virginia, already approved;
- \$50K reserved for accrediting state metrology labs in FY 1999;
- \$87K approved for accrediting state metrology labs in FY2000

Restructuring NTEP

- Workshop held June 4, 1999
- Conformity Assessment

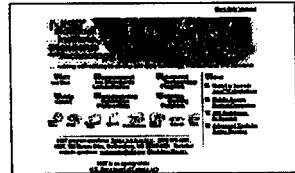
Parcel Shipping Scales Workshop

- OWM/NCWM Workshop
- DOT Opinion

Weights and Measures Economic Impact

| | |
|---|------------------|
| • Food Sales (wholesale & retail) | 2015 Billion |
| • Retail sales (not including food) | 2,000 |
| • Petroleum products | 280 |
| • Other industries | |
| - Metals and industrial minerals | 40 |
| - Coal mining | 20 |
| - Lumber and wood products | 111 |
| - Construction material | 26 |
| - Textiles | 85 |
| - Paper products | 176 |
| - Rubber, Chemicals and allied products | 355 |
| - Stone and other metals | 47 |
| • Fruits, Nuts, Grain and other crops | 176 |
| • Transportation | |
| - Air cargo | 12 |
| - Railroad freight | 35 |
| - Truck freight | 347 |
| • Total (1998) | \$4.505 Trillion |

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Chairman's Address to the 84th Annual Meeting 1999

**Presented by Aves D. Thompson
Alaska Division of Measurement Standards**

Thank you, Gil, for the kind introduction.

One of the benefits of being Chairman is the opportunity to speak to old and new friends in a lovely setting such as Burlington, Vermont. While I haven't had much time to see Vermont, I am told by our members that the tours yesterday and today were great fun, and I know that we are all looking forward to a fun time on our dinner cruise tomorrow night. I am sure you know that putting together a meeting such as this is no small task. Special thanks go to our Headquarters staff, the technical staff at OWM, and the fine folks right here in Vermont who have made the meeting successful and productive.

Last July in Portland, I set my sights on four major objectives, and I'd like to talk about those objectives and discuss what kind of progress we are making.

Objective number one was to continue our Conference reorganization by finalizing the NTEP Business Plan and the Training Plan. The NTEP business plan work group headed by Barbara Bloch submitted its report to the Board of Directors the other day. This report provides an excellent framework to continue the work of strengthening NTEP. Although, as we are all aware, there are serious discussions about the management of NTEP. This document will be of great help in putting together either of the management options that we have discussed. The Training Plan Work Group working with the A&P committee has a 3-year training plan that the committee will present for a vote during our voting sessions on Wednesday and Thursday.

Additionally, it was necessary to complete the transition of many of the administrative and meeting planning issues of the Conference from OWM management to our new association management contractor. I am pleased to report that, for all practical purposes, this transition is complete. There are a few lingering issues that will need attention, and I am sure that these items will be completed with the continuing spirit of cooperation between our Headquarters staff, OWM, and the NCWM Board of Directors. As a symbol of the success of our work with our contractor, I am pleased to announce that a contract renewal has been signed with Management Solutions Plus, Inc. and NCWM, Inc. for the next fiscal year ending September 30, 2000. I have enjoyed the never-ending support of Beth Palys and her very capable staff over this past year. I know that this high level of support will continue.

One of the most significant accomplishments at our Annual Meeting in Portland last year was signing a Memorandum of Understanding (MOU). This historic agreement between the National Conference on Weights and Measures, Inc., and the National Institute of Standards and Technology Office of Weights and Measures marked a new beginning in what has been a very long and productive relationship between our two organizations.

This umbrella agreement led to the signing of a second Memorandum of Understanding on September 30, 1998. This leads right into the **second objective** that I set last year. This second MOU documented a joint effort whereby the Conference and NIST each contributed \$25,000 to develop a program that could enhance the value of the NTEP program by making electronic copies of the NTEP Certificates of Conformance on the Internet and to update a membership database maintained at NIST. Work was done; focus groups met; Requests for Proposals (RFP's) were prepared and reviewed; and contracts were signed. Today, at the conclusion of the presentation of H-133, Tom Ahrens will conduct a live demonstration of the results of all of this effort. Please take some time to visit the demonstration. I think you will be very impressed as I was. I was able to get an advanced copy for our Alaska inspector's to work with for a few days. They are thrilled. We are very very proud of this work, and I might add, it came in slightly more than 20 percent under budget. The membership database update has been completed, and that project came in slightly under budget.

Objective number three is to provide an outreach to device service technicians to strengthen our working relationships. Throughout this year, I have conducted meetings at the Regional Association Meetings to discuss ideas on how to strengthen these relationships. The issue was discussed at the meetings of the SMA and at the annual meeting of the

ISWM in June in Atlanta. At the Interim Meeting in January, I asked the Voluntary Program Assessment Working Group to add this item to their agenda. We have been working with other organizations, in particular, the International Society of Weighing and Measuring (ISWM). ISWM has developed a voluntary technician certification program that I think may dovetail nicely with the Registered Service Agency programs of the states. There may be opportunities to eliminate duplicate testing. Through our joint efforts on this project, I believe that we have made significant strides in improving this relationship. I was authorized by the Board of Directors to continue to explore ways that the Conference can work with ISWM to strengthen their certification program. There is an item on the A&P agenda this week that deals with service technician training. I think it is clear that the Conference recognizes the importance of training not only for the regulators but also the thousands of technicians that work on these devices every day throughout the country.

Objective number four was to finalize the product survey protocol as soon as possible. You heard a discussion of this protocol in the Board of Directors open hearing yesterday. This protocol sets a procedure whereby the National Conference will participate in national product surveys. The protocol is ready for vote this week, and this vote is the culmination of a great deal of work by a lot of very talented people. I believe that this is another shining example of the very best of the NCWM. A problem was identified; industry and government pitched in to solve the problem, and as a result, we have an enduring guidelines for the conduct of these studies.

With your help, I feel that we have substantially met the objectives. It is very rewarding to work with a group of professionals and to be able to see the fruits of our labors. I thank all of you who worked on these four objectives.

It is important to stop for a moment to acknowledge our close relationship with NIST and particularly the Office of Weights & Measures. Although this has been a year of change and uncertainty, Gil and the staff at OWM have worked hard to help us. They have offered many constructive suggestions. While we have not always heeded their advice, we do sincerely appreciate their help. We have appreciated the support of the senior management levels at NIST. It is good to know that we have friends in high places. We will continue to work together in a full partnership to achieve our common goal of equity in the marketplace.

I discussed some other issues last summer, and I am pleased to report that the committee process is alive and working well. The issues are working their way through the process, and when the time is right, the Conference will act.

I would like to shift focus from the past to the future. Our strategic planning efforts over the past few years have produced four goals for the Conference.

1. Enhance the NCWM as a national and international resource for measurement standards development.

I think we do this in a couple of different ways. One, we invite the broadest possible participation in our meetings and our processes. Secondly, we continue to reach out to our international partners to kind of "show our stuff." We have an excellent process with excellent people who create excellent standards. We need the interaction with others to demonstrate that we are a leader in national and international measurement standards development.

2. Provide uniform training programs for industry and government individuals involved in legal metrology.

Recently, I sent a letter to Gil Ugiansky informing him of a Board of Directors' decision to discontinue the receipt of training grants until such time as accounting difficulties can be resolved. This has been viewed by some as a declaration that the Board and ultimately the Conference are not interested in training. This view cannot be farther from the truth. The Conference is committed to training. Over the years, thousands of hours, many more thousands of dollars, and an immeasurable amount of energy have been devoted to training. Our goal is clear; we support training and want to continue. Things have changed just enough to warrant a complete review and restructuring of the method by which training grants are handled.

3. Continue to develop new or alternative methods for improved delivery of weights and measures programs.

James Harnett said at a Western Weights and Measures Annual meeting some years ago that there will come a time when we can't afford to pay an inspector to put test weights on a scale. Tom Geiler talked about "transaction analysis" some years ago. Dave Smith once took us on a trip to the 21st Century where Eric is a weights and measures inspector. We need to continue to examine our methods. We need to question the "old ways." We need to work smarter.

4. Continue to expand the role of the Conference in national and, as a resource, in international legal metrology.

I believe that this ties closely with goal number one in that we need to interact with all interested parties; we need to reach out; we need to participate.

Our Conference theme this year is "Setting Standards of Excellence in the Pursuit of Equity." I have watched the committees work. I have worked closely with the Board of Directors, Headquarters staff, OWM, NIST staff, and I am convinced that we all followed the theme of setting standards of excellence for ourselves, for our organizations, and for our Conference. Remember that excellence is the standard. Don't accept anything less.....

As we have been working this week to try to set high standards, we have again taken input on the issue of the NTEP management. We have taken input at every opportunity to ensure the broadest possible exposure to the wishes of our membership. In an open forum as late as yesterday, we were still discussing the pros and cons of options under consideration. The Board of Directors met with NIST Director Ray Kammer, Deputy Director Karen Brown, Subhas Malghan, Mike Rubin, and Gil Ugiansky this morning to discuss the NTEP management issues. Options one and two were explored, and NIST made it clear that they will continue to strongly support the NTEP program in either case. Their support will come in the form of lab accreditations through their existing lab accreditation programs, and they will continue to support the Conference as they have done in the past.

Based on the input of our membership, both industry and regulators and the clear message of support by NIST for NTEP, the Board of Directors voted unanimously this morning to adopt option one. In our meeting with NIST this morning, we all agreed to a timely and orderly transition. While many of the details need to be worked out, we have set a course for NTEP. I know that you will hear much more about this decision in the next couple of days. I am very pleased that the decision has been made as we can now move forward to ensure a strong, healthy, and robust NTEP program.

I leave you with this thought:

Alan Kay is the one who said:
"The best way to predict the future is to create it."

I submit to you that we have come a long way in creating our future during this past year. There is still much to be done to complete the work of the 20th Century, but I believe that we have set the stage for the new millennium, and I, for one, am very proud of the work that we have done.

To close, I quote Jim Truex: "Thank God, you only get to be Chairman once."

Thanks for a great year!

HONOR AWARDS

10 YEARS

Richard Calkins
Mark Coyne
Christopher Guay
Monty Hopper
Randy Jennings
Ray Kalentowski
Bruce Martell
Rich Philmon
Ed Romano
Gary West
Curtis Williams

15 YEARS

Barbara Bloch
Robert Brumbaugh
Melvin Hankel
Robert Reinfried

25 YEARS

Sidney A. Colbrook
Daryl Tonini

30 YEARS

Joseph Silvestro

Special Recognition Awards

The success of this Conference is the result of the dedication and hard work of many individual members. At the general session, the Conference recognized the work of the following members for their contributions over the past years within their respective committees and for their contributions to the National Conference in general.

Board of Directors

Charles Carroll, Massachusetts

Laws and Regulations Committee

Karl Angell, West Virginia

Specifications and Tolerances Committee

Darryl Brown, Iowa

Administration and Public Affairs Committee

Richard Greek, San Luis Obispo, California

Presiding Officers

Dennis Ehrhart, Arizona
Ray Kalentkowski, Connecticut
Vernon Massey, Tennessee
Don Onweiler, Nebraska

Sergeants-at-Arms

James Cameron, Vermont
GS-9

Associate Membership Committee

The Associate Membership has contributed immeasurably to the many achievements of the Conference, most notably the development and widespread acceptance of the National Type Evaluation Program, the National Training Program, and Handbooks 44, 130, and 133. Today, we have even more involvement with our business partners in such activities as the National Type Evaluation Technical Committee Sectors, Handbook 133 Working Group, Petroleum Subcommittee, Program Assessment Working Group, and Multiple Dimension Measuring Devices Working Group. In addition, associate member representatives serve on the Board of Directors and two standing committees of the Conference. We now recognize the Associate membership through their chairman, Gale Prince, Kroger Company.

Special Purpose Committees

Credentials Committee

Jack Kane, Montana

Nominating Committee

Steve Malone, Nebraska

Barbara Bloch, California

Sid Colbrook, Illinois

Charles Gardner, Suffolk County, New York

Tom Geiler, Barnstable, Massachusetts

N. David Smith, North Carolina

Jim Truex, Ohio

Resolutions Committee

Robert Alviene, New Jersey

Joan Mindte, National Institute of Standards and Technology, Coordinator

President's Award

This was the fourteenth annual presentation of the prestigious President's Award. This award is given for two levels of achievement.

- 1) A banner is presented to those directors representing states that have 100 percent membership, both State and local weights and measures officials, in the National Conference on Weights and Measures for the first time in the membership year July 1, 1998, through June 30, 1999. Those states that repeat with 100 percent State and local membership are awarded a streamer for their banner. A streamer is presented for each year the state qualifies.
- 2) The second level of the President's Award is a certificate presented to any State in which all of the weights and measures officials from the State office are members of the Conference.

Streamer Awards for the Second Year

The State of South Carolina

Streamer Awards for the Third Year

The State of Texas

Streamer Awards for the Fifth Year

The State of Nevada

Streamer Awards for the Sixth Year

The State of Tennessee

Streamer Awards for the Seventh Year

The State of Hawaii

The State of West Virginia

Streamer Awards for the Eighth Year

The State of Washington

Streamer Awards for the Ninth Year

The State of Colorado

Streamer Awards for the Tenth Year

The State of Montana

The State of Oregon

The State of Utah

The State of Vermont

The State of Wyoming

Streamer Awards for the Eleventh Year

The State of Arizona

The State of Michigan

The State of New Hampshire

The State of Virginia

Streamer Awards for the Thirteenth Year

The State of Alaska

The State of Delaware

The State of Idaho

The State of New Mexico

The State of South Dakota

The following two States have had 100 percent membership in the National Conference on Weights and Measures for their States since the beginning of the award. These two States continue to have 100 percent participation in the membership program.

The State of Arkansas

and

The State of Nebraska

President's Certificate

Eight states qualify for the President's Certificate, with 100 percent of their State office staff members for the 1998-99 Conference year:

Fifth Year Award

The State of Missouri

Sixth Year Award

The State of Connecticut

Seventh Year Award

The State of Massachusetts

Eighth Year Award

The State of Illinois

The State of Indiana

Tenth Year Award

The State of Maine

The State of New York

The State of Wisconsin

Recognition Awards

Premium Diesel Work Group

Joan Axelrod
Glen Blythe
Larry Cunningham
Ron Hayes
Randy Jennings
Roger Leisenring
Gene Mittermaier
Paul Nazarro
Manuch Nikanjam
Jim Peeples
Beth Porlier
N. David Smith

Software Working Group

Steve Cook
Wes Diggs
Darrell Flocken
Charles Gardner
Frances Holland
Dennis Krueger

Report of the Board of Directors

Aves D. Thompson, Chairman
Division Director
Alaska Division of Measurement Standards &
Commercial Vehicle Enforcement

100 Introduction

This is the Report of the Board of Directors (BOD) for the 84th Annual Meeting of the National Conference on Weights and Measures (NCWM). The Report is based on the Interim Report offered in NCWM Publication 16, Program and Committee Reports; the Addendum Sheets issued at the Annual Meeting; and actions taken by the membership at the Voting Sessions of the Annual Meeting.

This Report contains items related to the management of the NCWM (items in the 101 Series). Items addressed by the National Type Evaluation Program (NTEP) Committee (formerly the 102 Series), have been moved to a separate report (see the new 500 Series). Table A, which is an index of reference key items included in the report, lists the reference key number, title, and page number for each item. Voting items are indicated with a V after the item number. An I denotes issues that are reported for information. Table B lists the Appendices to the report, and Table C provides a summary of the results of the voting on the Committee's items and the report in entirety.

Table A
Index to Reference Key Items

| Reference Key No. | Title of Item | Page |
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| 101-3 I | NCWM Policies | 6 |
| 101-4* I | Finances, Treasurer's Report | 6 |
| 101-5* I | Finances, Status of Audit..... | 7 |
| 101-6 I | Associate Membership Committee Report | 7 |
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| 101-12* I | Special Committee on Legislative Liaison, Status Report..... | 11 |
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| 101-17 I | Revision of NIST Handbook 44 | 12 |

*National Institute of Standards and Technology staff members do not serve as technical advisors for these items.

Table B
Appendices

| Appendix | Title | Reference Key No. | Page |
|----------|---|-------------------|------|
| A | Minutes of NCWM Board of Directors Strategic Planning Meeting on January 30, 1999 | 101-1 | 15 |
| B | Memorandum of Understanding between NIST and NCWM | 101-1 | 19 |
| C | Changes to the Bylaws for NCWM, Inc. | 101-2 | 25 |
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| E | Report of the Metrology Subcommittee for the 1999 Annual Meeting | 101-13 | 53 |
| F | Protocol for Conduct of National Studies | 101-14 | 55 |
| G | NCWM Budget for Fiscal Year 2000 | 101-4 | 59 |

Table C
Voting Results

| Reference Key No. | House of State Representatives | | House of Delegates | | Associate and Advisory Members | | Results |
|---|--------------------------------|---------|--------------------|---------|--------------------------------|---------|---------|
| | Yes | No | Yes | No | Yes | No | |
| 101-2 | 38 | 0 | 48 | 0 | 29 | 0 | Passed |
| 101-14 Voice Vote | All Ayes | No Nays | All Ayes | No Nays | All Ayes | No Nays | Passed |
| 403-5* (Moved from A&P Agenda) Voice Vote | All Ayes | No Nays | All Ayes | No Nays | All Ayes | No Nays | Passed |
| 100 (Report in its Entirety) Voice Vote | All Ayes | No Nays | All Ayes | No Nays | All Ayes | No Nays | Passed |

*This item from the agenda of the Administration and Public Affairs Committee was designated a "business" item by the Board and was voted on during the NCWM Inc.'s Annual Business Session.

Details of All Items

101-1 I Strategic Planning

This item was carried over from Item 101-4 of the Report of the 80th NCWM, 1995, Item 101-2 of the Report of the 81st NCWM, 1996, Item 101-1 of the Report of the 82nd NCWM, and Item 101-1 in the Report of the 83rd NCWM. See those reports for background on this item.

Strategic Planning Meeting

The Board of Directors (BOD) met on the Saturday before the 1999 Interim Meeting to continue the planning process. The minutes of the meeting are provided in **Appendix A**.

At the planning meeting, Chairman Thompson reported that the NCWM and NIST had signed a Memorandum of Understanding (MOU) to provide funds for putting the National Type Evaluation Program Certificates on the Internet and for modernizing the NCWM database of the NIST Office of Weights and Measures. A copy of the MOU is attached to this report as **Appendix B**.

Joint Meeting with A&P Committee

The BOD met with members of the Administration and Public Affairs (A&P) Committee during the 1999 Interim Meeting to discuss the Committee's planning efforts. The Board approved the Committee's request to establish a Training Subcommittee to advise the main Committee on training issues. The Board also endorsed the A&P Committee's proposal to present the plan of the Training Delivery Plan Strategic Planning Working Group as a voting item at the 1999 Annual Meeting. To facilitate resource allocation, the Board asked the Committee to prioritize the list of courses being recommended for delivery in Fiscal Year 2000 that is included in the plan. In response to the Committee's question concerning NCWM plans to establish a separate Internet site, the Board members said they had no immediate plans for a separate site. They asked the Committee to work on improving the existing NCWM web site on the NIST server for the present. A separate site may be established in the future.

NTEP Management

The strategic planning process has required the NCWM leadership and the management of NIST to take a close look at how both organizations operate. Many of the programs of both organizations are joint ventures, requiring that we review the roles and responsibilities within each venture. In doing so, we have discovered areas of concern which must be addressed.

The NTEP program is one of these areas. Within NTEP, there are a number of complex and somewhat contentious issues that must be resolved, for the well-being of both organizations. For the Board of Directors to address these issues, it must first establish a Conference direction by understanding the needs of the membership. To gain Conference perspective regarding the NTEP program, it may be beneficial to review the intent of the type evaluation program.

The program is designed to verify that a device complies with **design** specifications and is capable of complying with the **performance** requirements of Handbook 44. To meet this intent, the National Type Evaluation Program organizational structure was designed so that NIST/OWM would manage the program, train staff, audit testing laboratories, review test results, and issue certificates. The NCWM's NTEP Committee is to govern and direct the activities, policies, and procedures of NTEP. In performing these duties, NTEP, through the NCWM leadership and NIST management, has developed NCWM Publication 14, "National Type Evaluation Program; Administrative Procedures, Technical Policy, Checklists, and Test Procedures," as its guide for the operation of the program.

During the past few years, management decisions at NIST have led to changes in how and what activities of the Conference they are willing to support. In addition, the incorporation of the National Conference on Weights and Measures has required the legal counsels of both organizations to look closely at those areas that may place either party in harm's way. Their intention has been to define the roles and responsibilities of each party within the requirements of the law and to reduce exposure to liability while, at the same time, providing the mechanism for our programs to continue operating as efficiently and effectively as possible. The following are concerns both organizations have regarding NTEP:

- €# Through the current NTEP appeal process, the NTEP Board of Governors (as it is referred to in Publication 14) has the power to overturn decisions that NIST makes when the Chief of the Office of Weights and Measures, as an official of the United States Government, signs certificates.
- €# NCWM charges an annual "maintenance fee" for certificates that the Federal government issues which is enforced through the threat that NCWM will render certificates "inactive" if the holder of the certificate fails to pay NCWM.

Board of Directors

These two items seem to imply that a private body (NCWM, Inc., as it is now) has the authority to overturn the governmental act that issued the certificate.

What roles do NIST and NCWM play in the production meets type issue? Who should be responsible for ensuring production meets type, NIST or NCWM, Inc.? Who should be responsible for the production meets type appeal process?

In discussions of these issues, NIST Director Ray Kammer and Deputy Director Karen Brown have instructed NIST counsel and OWM management that NIST's role in NTEP is to be limited to the evaluation of Type. This would indicate that issues with respect to production meeting type are not within the purview of their role. The Conference has asked for this to be documented, detailing what level of assistance NIST can provide to the NCWM in the administration of production meeting type.

This decision by NIST dictates that NCWM re-evaluate and affirm the expectations of NTEP. To do so, requires input from NCWM members and other affected parties. NIST and the NCWM's NTEP Committee have scheduled a meeting to be held at the National Institute of Standards and Technology in Gaithersburg, Maryland, on June 4, 1999, to discuss this issue. The Board's objective is to hear the opinions of the membership concerning program expectations and to identify options within the confines of NIST's decisions and legal opinions.

It appears that the Certificate may be the key to resolving of many of these issues. NCWM must have equal ownership with NIST.

The NCWM's NTEP Committee and NIST management have proposed several options to resolve these concerns and clarify responsibilities. The following is a brief description of each option and the pros and cons as currently seen by the Committee.

Option 1: Remove NIST from the role of issuing NTEP certificates.

PROS

This would remove all of NIST's concerns regarding appeals and collection of fees. There would be one authority operating the program.

CONS

NCWM would assume all liability.
NCWM would have to hire staff or contract for service to administer NTEP.
NIST Department of Commerce name would no longer appear on the Certificates.
Some State and local laws and regulations may have to be changed.
National and international recognition of NTEP might be negatively affected.

Option 2: Create separate roles within the broader NTEP for NIST and NCWM with each having specific portions for which they are responsible. Both parties would sign the Certificate of Conformance indicating their individual responsibilities, i.e., NIST would be responsible for prototype evaluation and NCWM would be responsible for production meeting type.

PROS

Sets out which party has liability at what point in the certificate process.
Each party can charge fees to maintain its functions.
Laboratories and NTETC Sectors would be NIST's responsibility. These functions relate to the evaluation of the prototype device.

CONS

NCWM takes on the area where the largest number of appeals will occur and the greatest liability.
NCWM will be signing the certificate based on the good faith of the manufacturer.
May add to the time required to issue a certificate. (An additional signature would be required.)
NIST will need to develop a separate appeals process.
There would be two different and separate appeals procedures.
Could potentially result in higher total fees as a result of both parties charging maintenance fees.

Option 3: Make NTEP a program for the evaluation of prototype devices only.

NTEP would only evaluate prototype devices for compliance with Handbook 44 requirements. The question of production meeting type would not be an NTEP issue.

If production meeting type is not an NTEP issue, then does the regulatory authority to ensure that production devices meet type lie with the States and local weights and measures officials? In this scenario, neither NCWM, Inc., nor NIST has regulatory authority to control production devices. What does the current type evaluation certificate indicate? Some would say it shows that the manufacturer has the ability to understand and can meet Handbook 44 requirements.

In the current production process, the manufacturer must use this knowledge in the manufacture of all future devices of the type. The assurance that this is occurring is gained through customer expectations and satisfaction (free market system). Problems with initial verification and subsequent verification should be handled by the regulatory authority.

Controversy between manufacturers should be left to the free market system.

Industry could develop self-imposed standards for industry accreditation to deal with the issue of production meeting type.

PROS

There is no liability on NIST or NCWM regarding production meeting type.
Appeals would be limited to the process of type evaluation and the data gathered.

CONS

State and local officials would be responsible for determining if production meets type.
It would be difficult (or impossible) for them to determine compliance with the Handbook 44 requirements related to influence factors.

Field officials might be unable to attribute performance problems to particular device components (for example, load cells, indicators, and software) so that they could be tested for compliance with Handbook 44. In addition, it may be difficult for field officials to differentiate problems related to production meets type from installation and maintenance problems.

In its Interim Report, the NCWM, Inc., Board of Directors noted that it had to address the proposals and that it wanted to know the position of the Conference membership on each proposal, so that it could present a sound position to NIST.

With this in mind, the Board announced its intention to conduct a public forum to address each proposal and other possible options at the Annual Meeting of the NCWM in July. In addition, Board members said they would like the options to be discussed at the two regional weights and measures meetings that were to be held in the spring.

On June 4, 1999, NCWM and NIST sponsored a special NTEP Workshop to solicit comments on the three options for administering the program. Additional comments were sought during the spring 1999 regional meetings and during the NCWM Annual Meeting in July. At the Annual Meeting, the BOD met with NIST management to discuss the options. After consideration of all of the input it received, the Board later announced that it had selected Option 1 for the administration of NTEP. NCWM and NIST will work together to ensure a smooth transition from NIST administration of NTEP to NCWM administration of the program.

During its Strategic Planning Meeting at the Annual Meeting, the BOD reviewed its role in administering the training grant funds provided by NIST. The BOD noted that while it is unwilling to continue with the present method of handling training grant money, it wishes to reemphasize its commitment to training. The Instructor Training Course scheduled for August 1999 will continue as planned. The remaining funds in the grant, totaling approximately \$100,000 will be returned to NIST.

101-2 V Review of Bylaws

(This item was adopted.)

Recommendation: Adopt the changes to the Bylaws of the National Conference on Weights and Measures, Inc., contained in Appendix C.

Background: In 1998, NCWM, Inc., adopted new Bylaws that reflected the changes made in the Conference as a result of incorporation. At the 1999 Interim Meeting, BOD members continued the process of reviewing and refining the Bylaws; consequently, several additional changes are being recommended for adoption by the NCWM membership. The major changes include the following:

1. Simplifying the voting procedures for business items,
2. Deleting references to a separate Auditing Committee because an outside auditor has been hired and the Board has determined that it should assume the responsibility of reviewing and implementing the auditor's recommendations,
3. Deleting specific dates for the membership year to allow the Board more flexibility in setting the membership year in accordance with good business practices, and

4. Redefining the role of the NCWM Treasurer to reflect the responsibilities that have been assumed by the NCWM Headquarters office.

101-3 I NCWM Policies

The Board of Directors discussed updating existing policy documents and developing a separate Policy and Procedures Manual that would include all of the revised policies in one place. Although Board members agreed that such a manual was necessary, they felt that their first priority should be to refine the new Bylaws. Once they have refined the Bylaws, the BOD will address the issues of updating the existing policies, deciding what new policies are needed, and deciding how the policies should be recorded and maintained.

During its review of existing policies, the BOD noted that policy item 1.5, Procedures for Establishing the Budget and Administering Funds of the NCWM, was outdated. Members of the Board agreed to follow the budget procedures in the new Bylaws and to update the policy later.

The BOD received a suggestion to establish a policy defining how to distinguish between a “technical” issue and a “business” issue because the Bylaws say that all members may vote on business issues. Chairman Aves Thompson asked the NCWM Counsel, Simon Stapleton, to look into this question as part of his review of the Bylaws. During the discussion of this issue, Chairman Thompson noted that one consideration in determining whether an item is technical might be to look at the action resulting from the adoption of the item. For example, if adoption results in changes to the handbooks, the item would probably be considered technical. It was the consensus of the Board members that the Standing Committee Chairmen should determine whether an item is a “technical” issue or a “business” issue in consultation with their Committees. If there is a difference of opinion on, or a challenge to, a determination of the type of issue, the question could be referred to the Board to resolve.

The Board adopted the following policy at the 1999 Annual Meeting:

Policy on Business Versus Technical Issues

The initial determination as to whether an item is business or technical shall be made by the Chair of the Standing Committee. If the Standing Committee is unable to resolve the issue, the decision shall be made by the Board of Directors. The Standing Committee and the Board of Directors shall use the following guidelines in making a determination:

A. Technical issues include, but are not limited to, the following:

- i. Items that will be published in Publication 14 or Handbooks 44, 105 series, 130, and 133 and**
- ii. Items that may lead to enforcement action by regulatory agencies.**

B. Business issues include, but are not limited to, the following:

- i. Items concerning training and**
- ii. Items relating to how the Corporation is managed including, but not limited to, changes to the Bylaws and other documents governing the operation of the Corporation.**

The policy will be included in the Corporation’s Policies and Procedures Manual.

101-4 I Finances, Treasurer's Report

Beth Palys, Executive Director of NCWM Headquarters, provided the BOD with a summary of NCWM expenses and income since the first of October 1998 when her organization began operating the Headquarters office.

Chairman-Elect Wes Diggs, who has responsibility for preparing the budget for the next fiscal year under the new Bylaws, described his plans for developing the budget for Fiscal Year (FY) 2000 (beginning October 1, 1999). He said he was requesting input from the Chairmen and Technical Advisors of the Standing Committees and others who have been identified as contributors to the budgeting process. He will then work with the Chairman, NCWM Headquarters, and the Treasurer to develop a budget for FY 2000. The group will complete the draft budget and send it to BOD members at least 30 days prior to the Annual Meeting where the Board will review and approve it.

The fiscal year 2000 budget was reviewed and approved by the Board at the Annual Meeting (see **Appendix G** for a copy of the budget).

101-5 I Finances, Status of Audit

At the 1999 Interim Meeting, Chairman-Elect Wes Diggs reported that the audit of the accounts for 1998 was about to begin. He said that the results of the audit will be announced at the Annual Meeting in July. The BOD agreed that NCWM accounts would be audited annually by an independent Certified Public Accountant. Board members agreed to propose a change to the Bylaws to delete references to a separate Auditing Committee because they felt that they should assume the function of reviewing and implementing the auditor's findings.

At the 1999 Annual Meeting, the Board reviewed and addressed items recommended by the independent auditor. The Board also decided to change the name of the Auditing Committee to the Finance Committee and to change the membership of the committee to the Treasurer and the two At-Large Directors on the Board.

101-6 I Associate Membership Committee Report

The Associate Membership Committee (AMC) met during the Interim Meeting to discuss various issues.

Several Associate members who serve on various committees and the Board of Directors presented reports. These included Rich Davis, Board of Directors; Chris Guay, L&R Committee; Jackie Wollner, A&P Committee; and Bill Corey, Legislative Liaison Committee.

The Associate Membership Committee was encouraged with the progress being made on the incorporation and the development of the structure of the Conference. AMC members were pleased to see the interest in the scholarship funds that they provided for 1998-1999. The Legislative Liaison Committee indicated that they have not yet seen a draft of the brochure that had been identified as a critical need for the Conference to assist in legislative activities. This funding request had come to the AMC last July from members of the Board. The AMC members felt that this was an important piece of information and would encourage that work be initiated on a draft as soon as possible.

AMC members reviewed the Product Study Protocol and considered the information that Ken Butcher shared with the Board of Directors. As a result, they made some additional changes to the protocol. The revised document will be retyped and forwarded to the Board. The Committee was encouraged with the progress on this document. The AMC supports the current draft as amended.

AMC Chairman Gale Prince reported that he and Ann Turner went to Burlington, Vermont, to review options for the 1999 Conference outing. Mr. Prince consulted with the Conference Chairman on the findings, and they selected an evening cruise on Lake Champlain as the outing.

The Associate Membership Committee (AMC) conducted an annual business meeting at the 1999 NCWM Annual Meeting. Reports were made by Associate Member Representatives on the Board of Directors (BOD) and the L&R and A&P Committees. The Associate Members were pleased to hear about the BOD's support of the legislative brochure and look forward to its completion, as the AMC has pledged funds towards this project. In addition, the AMC members are encouraged that the rewriting of Handbook 133 is being considered as an informational item, and look forward to future input on the item.

The AMC will be providing a \$25,000 contribution to the Conference to be designated for training scholarships. The AMC recommended that the Conference Chairman appoint the following individuals to 5-year terms on the AMC: Allan Nelson and Vince Orr. The following individuals were elected as officers of the AMC: Chairperson, Frances Holland; Vice Chair, Allan Nelson; and Secretary/Treasurer, Cary Frye. Bob Fuehne was appointed as the AMC Representative to the A&P Committee following Jackie Wollner's resignation from the committee.

101-7 I Organization, Appointments, and Assignments, Status Report

NCWM Chairman Aves Thompson and NTEP Committee Chairman Steve Malone made the following appointments (as of March 1, 1999):

Presiding Officers:

Dennis Ehrhart, AZ

Board of Directors

Ray Kalentkowski, CT
Vernon Massey, Shelby County, TN
Don Onwiler, NE

Laws and Regulations:

Don Onwiler, NE, 5-year term
Chris Guay, Procter & Gamble Co., 5-year term

Specifications and Tolerances:

Will Wothlie, MD, 5-year term

Administration & Public Affairs:

Dave Frieders, San Francisco County, CA, 5-year term
Jackie Wollner, Nestle USA, Inc., 5-year term
Jerry Flanders, GA, replacing Charles Carter
Louis Greenleaf, NJ, replacing Nelson Kranker

Nominating:

Steve Malone, NE, Chairman
Barbara Bloch, CA
Tom Geiler, Barnstable, MA
Charles Gardner, Suffolk Co., NY
N. David Smith, NC
Sidney Colbrook, IL
Jim Truex, OH

Resolutions:

Bob Alviene, NJ

Credentials:

Tony Lori, NJ

Parliamentarian:

Bruce Adams, MN 1-year term

Chaplain:

Mike Hile, AR, 1-year term

Sergeants-At-Arms:

Between the Interim and the Annual Meetings, NTEP Committee Chairman Malone made the following appointment to an NTETC Sector:

Measuring Sector:

Keith Ridenour, Endress + Hauser

Jim Cameron, VT
Marc Paquette, VT

Voluntary Program Assessment Working Group:

Sid Colbrook, IL, Chairman
Ross Andersen, NY
Charles D. Carter, OK
William J. Corey, Jr., American Frozen Foods
Craig Leisy, Seattle

Associate Membership Committee:

Gale Prince, Kroger Co., Chairman
Frances P. Holland, Schlumberger, Vice Chairman
Cary P. Frye, International Dairy Foods Association,
Secy/Treasurer
John Baker, Pier 1 Imports
Dave Cook, Kraft Foods, Inc.
Darrell E. Flocken, Mettler-Toledo, Inc.
Chris Guay, Procter & Gamble Co.
Chip Kloos, Colgate-Palmolive Co.
Dave Quinn, Fairbanks Scales
Paul Zalon, Nestle USA, Inc.

National Type Evaluation Technical Committee (NTETC):

Weighing Sector:

L. Edward Luthy, Brechbuhler Scales, Inc.
Don Onwiler, NE

Measuring Sector:

R. Barclay Beahm, Krohne, Inc.
Wade Mattar, The Foxboro Co.
Chris Eskind, Shell Oil Co.
Steve Hadder, FL

101-8 I Membership

The total NCWM membership as of June 30, 1999, was 3,625. The membership breakdown by category is as follows:

| | | | | | |
|-------------------|---|-------------|--------------------|---|-------------------|
| State Government | - | 1,044 (29%) | Foreign Associate | - | 36 (less than 1%) |
| Local Government | - | 713 (20%) | Foreign Government | - | 30 (less than 1%) |
| U.S. Government | - | 54 (1%) | Retirees | - | 241 (7%) |
| Associate Members | - | 1,507 (42%) | | | |

The Board proposed deleting reference to the membership year in the Bylaws (see Item 101-2). That change was approved at the Annual Meeting; therefore, the BOD will go forward with plans to change the membership year from July 1- June 30 to October 1-September 30. This change will make the NCWM membership year the same as its fiscal year, which will simplify the NCWM's accounting process.

101-9 I Meetings, Annual and Interim, Future

As of July 25, 1999, the plans for future meetings were as follows:

2000 Interim Meeting

The meeting is scheduled for January 18 to 23 at the Hyatt Hotel in Bethesda, MD.

2000 Annual Meeting

The meeting is scheduled for July 16 to 20 at the Omni Hotel in downtown Richmond, VA.

2001 Interim Meeting

The NCWM has signed a contract with the Mesa Pavilion Hilton Hotel in Phoenix, AZ, for January 8 to 14.

2001 Annual Meeting

The Washington, DC, area was selected as the site of this meeting in honor of the NIST centennial celebration.

2002 Interim Meeting

To reduce travel and shipping costs for NCWM Headquarters staff and OWM staff, the BOD has adopted an informal policy of holding the Interim Meeting in the Maryland area at least every other year; consequently, the BOD is considering sites in Maryland for this meeting.

2002 Annual Meeting

Representatives of the Central Weights and Measures Association (CWMA) plan to select sites to recommend to the BOD at CWMA's Interim Meeting in September 1999.

2003 Annual Meeting

The Western region is the planned location of this meeting.

The Board would like the Western Weights and Measures Association, and other regional associations that are asked for recommendations in the future, to provide the names of two possible locations for the meeting.

101-10 I Program, OWM and NIST

NCWM Executive Secretary and Chief of the NIST Office of Weights and Measures (OWM), Dr. Gilbert M. Ugiansky, gave a status report on OWM and National Institute of Standards and Technology (NIST) activities. He announced that the new NIST Deputy Director was Dr. Karen Brown, who most recently was a Distinguished Engineer at IBM Microelectronics. NIST Director Ray Kammer told Dr. Ugiansky that he and Dr. Brown planned to attend the NCWM Annual Meeting in July.

In other management changes at NIST, Thomas E. Gills was named Acting Director of the Office of Measurement Services, which is OWM's parent division, and Director of Technology Services (TS) Dr. Peter Heydemann announced his retirement at the end of March 1999. Dr. Subhas Malghan was selected to serve as Acting TS Director.

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Dr. Ugiansky reported on several budget/support issues. He said that a reduced NIST Budget Initiative on Weights and Measures had gone as far as the Office of Management and Budget, but did not get into the President's budget for Fiscal Year (FY) 2000. Dr. Ugiansky noted that Director Kammer said he would resubmit the initiative for consideration in the FY 2001 budget if it was not included in the FY 2000 budget. Dr. Ugiansky reported that OWM had given NCWM a grant of \$125,000 last year for Instructor Training programs and had contributed \$25,000 to update the OWM/NCWM database as part of a Memorandum of Understanding signed between NIST and the NCWM (see Item 101-1). He said that Director Kammer had provided \$50,000 to OWM for FY 1999 to pay for the national accreditation of State metrology laboratories. Three States have requested the funds: Minnesota, Oklahoma, and Arkansas. Dr. Ugiansky announced that Director Kammer also agreed to fund a special project to set up a Netmeeting system with a group of pivotal State metrology laboratories. This will involve giving each of the laboratories the computer hardware and software to allow all States participating to take part simultaneously in training and intercomparisons as they occur in each of the labs.

In the area of technical activities, Dr. Ugiansky reported that NTEP had successfully completed OIML R-60 tests on two manufacturers' load cell models. He said that NTEP had received one application for R-76 (Non-Automatic Weighing Instruments) tests. A workshop on the inspection of package shipping scales by State and local weights and measures officials is being planned for spring 1999. Dr. Ugiansky said that NIST and NCWM are co-sponsoring the workshop for weights and measures officials, representatives of Federal regulatory agencies, parcel shipping companies, and other interested parties to explore preemption issues that have been raised. Dr. Ugiansky said the draft of the Fourth Edition of Handbook 133, Checking the Net Contents of Packaged Goods, is 50 percent complete; Ken Butcher of OWM is putting the Handbook in a new format that is shorter and should be easier to understand.

At the Annual Meeting, Dr. Gilbert M. Ugiansky, updated the Board on NIST and OWM activities since the Interim Meeting. He said that a replacement for Dr. Peter Heydemann, former Director of Technology Services (TS) had not been selected. [Note: Later during the Annual Meeting, it was announced that Dr. Richard F. Kayser had been named TS Director.] Dr. Subhas Malghan is serving as Acting TS Director. Dr. Ugiansky said that Tom Gills had been appointed Director of the Office Measurement Services.

Dr. Ugiansky reported that OWM had put the presentations made at the June workshops on parcel shipping scales and the National Type Evaluation Program on the Internet on the OWM and NCWM home pages within a few days after the workshops. He said that Terry Grimes of OWM had reorganized the NCWM home page and had made some improvements to the page's appearance. He also reported that all of the Interim Reports contained in NCWM Publication 16 had been placed on the OWM and NCWM home pages for the first time. He said that OWM staff had spent more than 100 hours working on the project to put the National Type Evaluation Program Certificates of Conformance on the Internet in a searchable format.

Dr. Ugiansky announced that a \$6.4 million budget initiative had been proposed for the fiscal year 2001 budget in the area of weights and measures. In addition, he said that NIST had allocated \$50,000 to pay the costs of State metrology labs seeking national accreditation in fiscal year 1999 and that \$87,000 has been set aside for fiscal year 2000. NIST has said that it would provide the funds to ensure that all State metrology laboratories could apply for and maintain national accreditation (see the Metrology Subcommittee Report for more information on accreditation). NIST has also committed \$225,000 for the purchase of the Netmeeting software for the 11 Regional Pivot Laboratories. The resulting network will be called MeasureNet.

101-11 I Program, International Organization of Legal Metrology

At the 1999 Interim Meeting, Dr. Sam Chappell, Chief of the NIST Technical Standards Activities Program, reported on U.S. participation in OIML standards development activities in legal metrology. The Board received a written report from Jim Truex, OH, on his participation in the Fifth Asia-Pacific Legal Metrology Forum (APLMF) and a meeting of the International Committee on Legal Metrology (CIML), which took place October 25 to October 30, 1998, in Seoul, Republic of Korea. The BOD plans to discuss Mr. Truex's recommendations at the NCWM Annual Meeting in July. (See **Appendix D** for a copy of Mr. Truex's report.)

At the Annual Meeting, Dr. Chappell said he would provide an updated report for inclusion in the BOD's final report. (See **Appendix D** for a copy of Dr. Chappell's report.)

101-12 I Special Committee on Legislative Liaison, Status Report

Tom Geiler, Chairman of the NCWM's Special Committee on Legislative Liaison, gave the Board of Directors a status report on the committee's activities. These activities included providing support for a NIST weights and measures funding initiative and assisting State weights and measures programs that were experiencing funding and other problems.

In 1998, the Associate Membership Committee set aside \$10,000 for the NCWM to use to develop a brochure on the Conference that the Legislative Liaison Committee could give to Congressional staff and others. In response to AMC members' concerns that no progress had been made on the brochure, the BOD asked Tom Geiler to lead an effort to obtain proposals for developing the brochure by July 1999.

At the 1999 Annual Meeting, the BOD authorized an expenditure of \$5,000 from Conference reserve funds for the purpose of completing the brochure project in cooperation with the Associate Membership Committee. The target for completion of the brochure is the 2000 Interim Meeting.

101-13 I Metrology Subcommittee Report

Ken Fraley, Vice Chairman of the Metrology Subcommittee, presented the committee's report to the BOD at the 1999 Interim Meeting.

Subcommittee Chairman Ron Balaze presented an updated report to the Board at the 1999 Annual Meeting. (See **Appendix E** for a copy of the Subcommittee's written report.)

101-14 V Product Studies Protocol

(This item was adopted.)

Source: NCWM Associate Membership Committee (AMC)

Recommendation: Adopt the protocol for conducting national product studies that is contained in **Appendix F** and publish it in the NCWM's Policies and Procedures document.

Background: A number of NCWM Associate Members expressed concern about the way a 1997 Federal/State Milk Study was conducted and the way the results were handled. They believe that standard procedures should be in place to determine when such studies should be conducted.

AMC representatives met with NCWM and OWM officials at the Western Weights and Measures Association Annual Meeting in September 1997 to discuss their concerns about the Milk Study. At that meeting, a first draft of a Weights and Measures National Product Evaluation Study Process for Problem Identification, Evaluation, Resolution, and Reporting was developed.

In January 1998, the Executive Committee met with AMC representatives to further discuss this issue. The Committee agreed that work should continue on the item. The AMC was asked to continue developing the procedures. A draft of the protocol was published in the Executive Committee's Interim Report for comment. A revised draft was published in the Committee's final report to the 83rd NCWM.

At the 1999 Interim Meeting, the NCWM Board of Directors reviewed the latest draft of the protocol provided by the AMC and decided to propose the adoption of the protocol at the 1999 Annual Meeting.

101-15 I Service Technician Outreach

NCWM Chairman Aves Thompson reported on his efforts to identify opportunities for the Conference to work with and better serve the needs of its members from the service agency sector of the weights and measures community. He said he had distributed a survey to State Directors asking them for the number of registered and nonregistered servicepersons in their States. Survey respondents reported a total of 23,000 servicepersons throughout the United States. Mr. Thompson said he has since been told that this number may be low; in fact, the actual number could be as much as double the reported figure.

Mr. Thompson said that since July 1998, when he announced outreach to servicepersons as one of his priorities during his year

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as NCWM Chairman, he had met with a number of groups to discuss this issue. The groups included participants at the 1998 Western and Southern regional weights and measures association meetings and the annual meeting of the International Society of Weighing and Measurement (ISWM). He said that servicepersons expressed an interest in developing closer ties with the Conference.

In a discussion with Sid Colbrook, IL, Chairman of the NCWM's Voluntary Program Assessment Working Group, Mr. Thompson was told that, although many States have Voluntary Registered Servicepersons programs, the program requirements may vary considerably. Many of these programs do not require individuals to take a test or participate in any training to become a registered serviceperson. Mr. Colbrook said that the Central Weights and Measures Association is working on a proposal to have a core test and a State specific test for servicepersons.

Mr. Thompson plans to work with the A&P Committee and the Voluntary Program Assessment Working Group to develop a plan on how to proceed in this area.

In June 1999, Chairman Thompson met with ISWM to discuss service technician outreach as it related to ISWM's Service Technician Certification Program. The BOD has authorized Mr. Thompson to continue to explore joint training opportunities for service technicians with ISWM.

101-16 I Copyright of NIST Handbooks by NCWM

Source: Strategic Planning Work Group on the NCWM Business Plan

Proposal: The NCWM should proceed deliberately, yet cautiously, to copyright all possible Conference documents, including NIST Handbooks 44, Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices, and 130, Uniform Laws and Regulations.

Justification: The Conference should protect the work product of the Conference and consider all revenue enhancement opportunities.

Background: At the suggestion of the NCWM Business Plan Working Group, the BOD has been exploring the possibility of copyrighting NCWM documents, including NIST Handbooks 44 and 130. NCWM Counsel Simon Stapleton met with NIST Counsel Mike Rubin and a copyright expert from the Department of Commerce and determined that it might be possible for NCWM to copyright the NIST handbooks. Some questions have been raised, however, concerning the appropriateness of copyrighting the handbooks considering the NCWM's mission of promoting uniformity. Chairman Thompson responded that he felt there was a need to protect NCWM standards from abuse. He said the NCWM may need to copyright some documents but should be very liberal with granting permission to copy the documents.

NIST Director Ray Kammer raised a number of questions concerning the copyright issue. He said that he would need a detailed response to his questions before he could make a final decision. Chairman Thompson asked Chairman-Elect Wes Diggs and the Strategic Planning Work Group on the NCWM Business Plan to study the issues raised by copyright and make a recommendation to the BOD in July.

Work is continuing on this item.

101-17 I Revision of NIST Handbook 44

Source: NCWM Chairman-Elect G. W. Diggs

Proposal: The Board of Directors should consider revising NIST Handbook 44, Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices, and making available the time and resources it would take to complete such a project. Consideration should be given to changing the format to make the handbook more user friendly and easier to reference. The revised version should also address newer technology and facilitate uniform interpretation of the handbook.

Justification: People have expressed concern about the difficulty that individuals at all levels of the weights and measures community have interpreting the handbook.

Background: At the 1999 Interim Meeting, Chairman-Elect Wes Diggs described to the BOD how he would like to proceed with revising Handbook 44. He said he would begin by developing a plan to reorganize the document and then later would consider changing the wording of the requirements. He would like to assemble a small group to begin work on the Handbook 44 project. The BOD endorsed Mr. Diggs' plans.

Participants at the meeting raised questions about how the changes would affect NCWM Publication 14, which contains the checklists for the National Type Evaluation Program, and the training courses published by the NCWM, which contain a number of references to Handbook 44. Someone suggested dividing the Handbook into individual codes and selling them separately.

A. Thompson, Alaska, Chairman

G. W. Diggs, Virginia, Chairman-Elect

S. Malone, Nebraska, Past Chairman/NTEP Committee Chairman

J.A. Rogers, Virginia, Treasurer

C. Carroll, Massachusetts

R. Davis, Fort James Corporation

B. DeSalvo, Ohio

M. Hile, Arkansas

M. Pinagel, Michigan

L. Straub, Maryland

G. West, New Mexico

Board of Directors

Executive Secretary

G. Ugiansky, NIST

Board Advisors:

J. Koenig, NIST

B. Palys, NCWM Headquarters

G. Vinet, Canada

Appendix A

Minutes of NCWM Board of Directors Strategic Planning Meeting January 30, 1999

Participants: Richard Davis, Wes Diggs, Mike Hile, Joan Koenig, Steve Malone, Beth Palys, Mike Pinagel, Simon Stapleton, Lou Straub, Aves Thompson, Gil Ugiansky, and Gary West

Agenda:

1. Opening Remarks - Chairman Aves Thompson
2. NCWM Business Plan Review - Chairman-Elect Wes Diggs
3. Discussion of Planning Issues - Chairman Thompson
 - a. Document Copyright
 - b. Publications
 - c. Administration of Grants and Other Funds
 - d. Fiscal Year Versus Membership Year
 - e. Treasurer Position
 - f. Audit Committee

Discussion:

1. Opening Remarks - Chairman Thompson welcomed everyone to the meeting. He introduced Beth Palys, who is the Executive Director of the new NCWM Headquarters Office. Mr. Thompson stated that three Board members were unable to attend the Strategic Planning Meeting: Barbara DeSalvo, Charles Carroll, and Alan Rogers. Mr. Thompson then introduced Wes Diggs and asked him to update everyone on the status of the NCWM Business Plan.

2. NCWM Business Plan Review - Chairman-Elect Diggs went through the Business Plan item by item and discussed the status of the items. The following decisions were made or actions were taken during the review:

Strategy I, Conduct of Meetings

SOP for Interim and Annual Meetings - The National Institute of Standards and Technology Office of Weights and Measures (OWM) has been working on a Standard Operating Procedures (SOP) Manual for the major NCWM meetings to facilitate the transition of meeting planning responsibilities from OWM to the NCWM Headquarters Office. A draft of the SOP was delivered to the Headquarters Office in November 1998. The BOD asked if OWM could complete the final version of the SOP by February 15, 1999, and give a copy to Headquarters. Board members asked OWM staff to send them an e-mail message to let them know when the document has been completed.

Strategy II, Organization and Resources

MOU to put the NTEP CCs on the Internet - The Board asked Joan Koenig to include the second Memorandum of Understanding (MOU) signed by the NCWM and NIST/OWM in the BOD's Interim Report. The MOU provides funds for putting the National Type Evaluation Program (NTEP) Certificates of Conformance on the Internet and for updating the OWM/NCWM database.

Training Money - The Board asked Mr. Diggs to add the issue of whether or not the NCWM will continue to receive and administer grant funds from NIST for training and industry funds for metrology training to the Business Plan. Gil Ugiansky announced that Georgia Harris of his office is drafting an MOU on Training for NCWM's consideration. The Board asked for the draft to be completed by March 31, 1999, and sent to members of the Board, NCWM Counsel Simon Stapleton, and Beth Palys for comment. The Board agreed to respond with its comments by April 29. BOD members asked that the draft spell out in detail the roles of each of the parties with respect to training.

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Liability Insurance - BOD members reviewed the NCWM's existing liability insurance and concluded that it meets current needs.

Audits - The BOD agreed that NCWM accounts would be audited annually by an independent Certified Public Accountant. Mr. Diggs announced that the next audit was scheduled to begin on the Monday following the Interim Meeting.

Auditing Committee - The BOD decided to propose deleting references to the Auditing Committee in the Bylaws. The BOD believes that the Committee is no longer necessary because an outside auditor has been hired to review the Conference's accounts. Board members felt that it was their responsibility to assume the function of reviewing and implementing the auditor's findings.

Budget - The BOD agreed that the Chairman-Elect would work with the Chairman, NCWM Headquarters, and the Treasurer to develop a budget for the next fiscal year (beginning October 1, 1999). The Standing Committees will provide input to the budget group on their budgetary needs. The group will complete the draft budget and send it to BOD members at least 30 days prior to the Annual Meeting where the Board will review and approve the budget.

Membership Year - It was proposed that the NCWM membership year be changed so that it is the same as the NCWM's fiscal year (October 1 to September 30). Beth Palys stated that this would simplify the NCWM's accounting procedures. The Board decided to propose deleting references to the membership year in the Bylaws and to change the membership year as proposed. The Business Plan Working Group was asked to develop a plan to change membership year.

NCWM Treasurer - The BOD is requesting that Treasurer Alan Rogers work with Beth Palys and Simon Stapleton to: 1. Outline the role that the Treasurer should assume as a result of the changes that have occurred in the organization of the Conference and 2. To propose changes to the Bylaws to describe the new role.

Voting Procedures - The Board is recommending changes to the Bylaws to simplify the voting procedures as specified in Appendix A of the Board's Agenda for the 1999 Interim Meeting.

Amendments - The Board is proposing changes to Bylaws Article XI, Amendments, to specify that amendments to the Bylaws would have to be published only in the Program for the Annual Meeting and discussed at the Board's open hearing at the Annual Meeting in order to be proposed for a vote. Board members felt that this would provide adequate due process. They also decided to recommend a change to the voting requirements for Amendments to the Bylaws.

Other Changes to the Bylaws - The BOD asked Simon Stapleton and Beth Palys to review the Bylaws to see if any additional changes were needed as a result of the changes in the organization of the business activities of the Conference.

Registration of NTEP Logo - Simon Stapleton reported that the process to register the NTEP Logo had been delayed because the paperwork had to be resubmitted. The Board asked Mr. Stapleton to resubmit the registration form to the Patent Office by March 31, 1999.

Strategy III, Participation and Liaison with Other Organizations

Contacts with Other Organizations - Joan Koenig said she had prepared a list of the standards of other organizations that are referenced in NIST Handbook 130, Uniform Laws and Regulations, at the request of the Working Group. She said she would send copies of the list to BOD members and, if the information appeared to be useful, she would develop similar lists of the standards that are referenced in NIST Handbooks 44 and 133. The BOD plans to review the lists and decide how to make technical contacts with the groups whose standards are referenced.

Participation in Meetings of Outside Groups - The Board agreed that the budget should be the driving force concerning whether or not NCWM members will attend meetings of other organizations. Members adopted the general policy that the NCWM recognizes the importance of maintaining contacts with outside groups and will annually review funding for such participation as a part of the budget process.

Strategy V, Standing Committees, Regional Associations, State and Local Jurisdictions Standing Committee Support

OWM Support to Regional Meetings - The BOD asked OWM for a commitment to send the OWM technical advisors for the NCWM Specifications and Tolerances and Laws and Regulations Committees to each of the Regional Annual Meetings. OWM Chief Gil Ugiansky said he will discuss the proposal at OWM's next managers meeting and get back to the Board with a decision.

MOU on State Laboratory Accreditation - Gil Ugiansky announced that NIST has provided \$50,000 in fiscal year 1999 to pay fees associated with the accreditation of State Metrology Laboratories by a nationally recognized organization. The Board asked if it would be possible for OWM staff to draft an MOU that would ensure the continuation of the laboratory accreditation funding support from NIST for the future. Board members agreed that the training MOU is the first priority and the Accreditation MOU is a second priority. A tentative date of March 31, 1999, was set for completing the draft, pending Dr. Ugiansky's discussions with OWM staff member Georgia Harris.

Planning Process

The Chairman-Elect was asked to continue the planning process by updating and adding to the Strategic Plan of the Business Plan Working Group.

3. Discussion of Planning Issues - The discussion of several major planning issues, which Chairman Thompson led, resulted in the following decisions and actions:

Copyright -The Chairman-Elect and the NCWM Business Plan Working Group were asked to explore the issues related to copyrighting Conference publications, including NIST Handbooks 44 and 130, and to develop a recommendation for the BOD by the Annual Meeting. Mrs. Koenig was asked to investigate whether or not the NCWM could order and pay for extra copies of the NIST Handbooks that are printed through the Government Printing Office to sell to nonmembers. She was also asked to determine if GPO would print documents that were copyrighted by the NCWM.

Publications - The Business Plan Working Group will look at all NCWM publications and those that are jointly published with NIST to identify any necessary action.

Administration of Grants and Other Funds - The Board discussed whether to continue administering training grant funds and metrology training funds for OWM. The draft Training MOU that OWM is preparing will be considered in resolving this issue (see Discussion Item 2, Training Money).

Fiscal Year Versus Membership Year - (See Discussion Item 2, Membership Year.)

Treasurer Position - The Board recognized that the role of the Treasurer has changed substantially as a result of hiring a management company to operate the NCWM Headquarters Office and acted to redefine the Treasurer's role (see Discussion Item 2, NCWM Treasurer).

Auditing Committee - (See Discussion Item 2, Auditing Committee.)

Appendix B

Joint Project Agreement Between the National Institute of Standards and Technology, Office of Weights and Measures, and the National Conference on Weights and Measures, Inc.

This Memorandum of Understanding (MOU) is made and entered into by and between the National Institute of Standards and Technology (NIST), Office of Weights and Measures (OWM), and the National Conference on Weights and Measures, Inc. (NCWM). NIST and NCWM shall be referred to in this Agreement as the "Parties."

1. Purpose: The purpose of this project is to convert the membership database of the NCWM to a more modern and Internet compatible software and to put the information in NCWM Publication 5, National Type Evaluation Program (NTEP) Index of Device Evaluations, on the Internet in a searchable format.

2. Background: NCWM is a non-profit organization. OWM and the NCWM have the mutual goal of promoting uniformity in State and local weights and measures laws, regulations, standards, and practices. Consequently, the two organizations often share information and resources. OWM has been maintaining the membership database for the NCWM. The information in the database is used by both the NCWM and OWM for numerous purposes. The NCWM is in the process of contracting with an Association Management Organization to take over some of the financial, meeting planning, and other administrative functions of the Conference. The new organization will take over the maintenance of the NCWM membership database; however, OWM will continue to have a need to access the information. Under this project, the NCWM database will be converted from the current out-of-date software to new software which will be more stable and will enable the management company and OWM to readily exchange information.

NTEP is administered by OWM in cooperation with the NCWM. It provides a national mechanism by which manufacturers can have types or models of their commercial weighing or measuring devices evaluated to determine their conformance with NIST Handbook 44, Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices. Devices that meet the requirements are issued Certificates of Conformance (CC's). OWM has been publishing NCWM Publication 5, which contains copies of the CC's issued by OWM following procedures that are developed and maintained by the NCWM. Many States require that any new commercial weighing and measuring equipment installed in the State must have an NTEP CC. Consequently, these States need to have rapid access to the latest information on the CC's that have been issued. Because of the slowness of the publication process, the information in Publication 5 is never completely up to date. The States participating in NTEP have asked that information on all CC's that have been issued be put on the Internet so that it is available in a more timely fashion. They have also requested that the information be in a searchable format so that they can access it in various ways, such as searching on a device type or a specific manufacturer. In addition, they want to be able to view and download copies of the CC's. This project would allow OWM and the NCWM to respond to the needs of their constituents in a much more effective manner.

3. Statement of Mutual Benefit:

As is stated above, NIST and NCWM hereby agree to combine their efforts to carry out the activities herein in order to better serve their constituency. The result of this cooperation between the Parties will be beneficial to both.

NIST has determined that this project cannot be done at all or done as effectively without the participation of NCWM because NIST and NCWM share the data in the NCWM database and in NCWM Publication 5. Therefore, participation and support is needed from both parties to ensure the usefulness and compatibility of the products produced.

Pursuant to its organic authority, the National Institute of Standards and Technology has the responsibility to undertake cooperation with the States in securing uniformity in weights and measures laws and methods of inspection." (See, U.S. Code, Title 15, Chapter 7, 272.)

The National Conference on Weights and Measures was established to promote uniformity. Article I, Section 2 of the Bylaws of the NCWM, Inc., states that the purposes of the organization include "± promotion of uniformity in weights and measures laws, regulations, and practices. . ."

* To develop a consensus on uniform laws and regulations, specifications, and tolerances for weighing and measuring devices, and on testing, enforcement, and administrative procedures.

- * To encourage and promote uniformity of requirements and methods among jurisdictions.

The level of interest by States in this effort is evidenced by the participation of representatives of all 50 States in the activities of the NCWM. In addition, NIST Handbook 44, Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices, which is maintained by the NCWM and published by NIST, has been adopted by all of the States as the source of technical requirements for commercial weighing and measuring equipment. Many of the States have also adopted the uniform laws and regulations developed by the NCWM.

Therefore it is in the mutual interests of the Parties to undertake the activities set forth in this MOU. This MOU will further the missions and objectives of both Parties by providing a means for them to combine their resources in conducting activities aimed at close examination of the many issues related to weights and measures policy. This should result in a greater understanding of these issues by both Parties and an enhanced ability to realize the opportunities presented by the products of their joint efforts.

4. Statement of Current Need:

NIST has a bona fide current need to enter into this MOU as soon as possible, and to thereby obligate Fiscal Year 1998 funds. The NCWM is in the process of contracting with an association management company to take over meeting planning, financial, and other administrative functions that had been done by NIST staff. The NCWM database is currently maintained by us but will be turned over to the new company which will take over October 1, 1998. Even though the new company will update the database, the Parties will need access to it to perform our technical activities; consequently, the parties need to have a database that can be shared by both groups. The database conversion that would be funded under the MOU will have to ensure that the database information can be shared, most likely through the Internet. The Parties need to have something in place as soon as possible after the management company takes over to prevent disruption in the activities of both NIST and the NCWM.

In addition to the conversion of the NCWM database, the Parties are planning to put information on the Certificates of Conformance (CC) issued under the National Type Evaluation Program on the Internet in a searchable format. The Parties need to begin this project as soon as possible because the parties have stopped issuing the Publication that contained copies of the CC's. Anyone needing a copy of a Certificate will have to go to their State Weights and Measures Office or the Internet to get it. There is currently some information on the CC's on the Internet but it is not searchable. NTEP could be adversely affected if the States or industry have trouble getting needed CC's. It is critical that the Parties put the entire list of CC's on the Internet in a searchable format as soon as possible.

5. Activities and Responsibilities of the Parties:

A. NIST Activities

1. OWM will contribute up to \$25,000 toward the conversion and modernization of the NCWM database.

B. National Conference on Weights and Measures Activities

1. The NCWM will contribute up to \$25,000 toward putting the information in Publication 5 on the Internet.

C. Joint Activities

Jointly, the Parties will engage in the following activities:

Action Items for Project to put NCWM Publication 5 Information on the Internet

- 1) Conduct focus group discussions with NCWM State and industry members to develop specifications for the search engine to access the NTEP Certificates of Conformance (CC's).
- 2) Revise current NTEP database to include additional fields that will contain complete certificate information necessary to display entire CC on the Internet.
- 3) Convert old CC's that are not in the NTEP database to an Internet compatible format such as PDF files.
- 4) Create a front-end form for the Internet with built-in search engine to enable searches on the various search

criteria identified in the focus group discussions.

- 5) Design a report in order to generate an NTEP CC directly from the database.

Action Items for the NCWM Database Conversion Project

- 1) Develop a conversion plan to ensure compatibility between NIST/OWM and the NCWM's Association Management Company.
- 2) Review existing structure of the database and develop a new structure to maximize use of the capabilities of the new software.
- 3) Develop project management time-line.
- 4) Implement capability to automatically generate directory of weights and measures officials, nominating committee report, and other publications.
- 5) Create reports to generate statistics regarding membership and to determine growth, publications sales, and other parameters.
- 6) Structure the database to maintain training programs and courses and generate training certificates.

The Parties recognize that NIST's ability to carry out its non-fiscal responsibilities under this MOU, i.e., those which will involve the expenditure of staff time in FY 1999, are subject to the availability of appropriated funds.

6. Length of Agreement:

This Agreement shall run for 1 year from the date of the MOU's signing, and shall be renewable for durations of 1 year. Either Party to this Agreement may terminate it at any time by giving written notice to terminate the Agreement.

7. Amendment to Agreement:

This Agreement may be amended at any time by written agreement of authorized officials of the Parties.

8. Authority:

This Memorandum of Understanding is entered into under the terms of 15 U.S.C. 1525, and under NIST's organic authority, under 15 U.S.C. 272.

9. Contact Persons:

In order to facilitate communications between the Parties, the following persons shall be the primary contact persons for the respective Parties:

| | |
|----------------------|---|
| NIST Contact Person: | Gilbert M. Ugiansky, Ph.D. Chief, Office of Weights and Measures |
| NCWM Contact Person: | Aves D. Thompson Chairman |

10. Fiscal Matters:

A. Budget

Please see the attached Budget. This document shall set forth the fiscal responsibilities of the Parties under this MOU.

B. Transfer of Funds By NIST to NCWM

NIST will transfer to NCWM the sums set forth therein to assist in sharing the costs incurred by NCWM in carrying out the activities related to this joint project. Upon termination of this MOU, any unused funds transferred by NIST to NCWM under this MOU will be returned to NIST with the filing of the next scheduled accounting, as called for in Section 11.

In the event of an early termination of this Agreement, unused funds must be returned to NIST within 60 days, or the date of the next scheduled accounting, whichever is earlier. Methods and procedures for payment shall minimize the time elapsing between the transfer of funds by NIST to NCWM and disbursement of those funds by the NCWM or its contractor(s). The Parties do not expect NCWM to owe interest or other income on funds transferred to it by NIST under this MOU, because of the timing of the disbursements by NIST to NCWM.

C. Cash Management

Procedures for minimizing the time elapsing between the transfer of funds from the U.S. Treasury and disbursement by NCWM and its contractor(s) must be followed wherever advance payment procedures are used. NCWM must establish reasonable procedures to ensure the receipt of reports on its contractor(s)'s cash balances and cash disbursements in sufficient time to enable them to prepare complete and accurate cash transactions reports to the awarding agency. When advances are made by letter-of-credit or electronic transfer of funds methods, the NCWM must make drawdowns as close as possible to the time of making disbursements. The NCWM must monitor cash drawdowns by their contractor(s) to assure that they conform substantially to the same standards of timing and amount as apply to advances to the NCWM.

11. Accounting:

NCWM and its contractor(s) must maintain records which adequately identify the source and application of funds provided for activities under this MOU. These records must contain information pertaining to NCWM or contractor(s) awards and authorizations, obligations, unobligated balances, assets, liabilities, outlays or expenditures, and income. Within ninety (90) days of the end of NCWM's fiscal year, NCWM shall provide to NIST an accounting statement reflective of its expenditures related to the implementation of this MOU for the preceding fiscal year.

Each accounting statement shall be certified by NCWM's Treasurer, or the equivalent certifying official. This certification shall be in the form of the following statement:

"I hereby certify that these are true, valid and correct financial obligations incurred by NCWM pursuant to the conduct of its duties and responsibilities relevant to the Memorandum of Understanding agreed to by the Parties, and any addenda thereto. In addition, all financial records and documentation related to this MOU are available at (the relevant office(s) of NCWM) and are subject to audit at NIST's request."

12. Rights to Use Results of Joint Project:

Any publications or software created from this joint project shall be made available to both Parties, and each Party shall have the right to publish or make use of any publications or software without obligation to the other Party. Each Party shall be entitled to a non-exclusive, royalty-free license in all countries to translate, reproduce, and publicly disseminate any scientific and technical journal articles, reports and/or books directly arising from activities conducted under this joint project.

13. Authorized Signatories:

This Memorandum of Agreement is executed by the duly authorized individuals whose signatures are affixed below:

National Institutes of Standards and Technology

By: _____ Robert Hebner _____ Date: _____ September 28, 1998 ____
Robert Hebner
Deputy Director

National Conference on Weights and Measures

By: _____ Aves D. Thompson _____ Date: _____ September 28, 1998 ____
Aves D. Thompson
Chairman

Appendix C

Changes to the Bylaws for NCWM, Inc.

(Information to be added is underlined and information to be deleted is ~~crossed-out~~.)

BYLAWS

Article I - General

Section 1 - Corporate Status

This Corporation shall be known as "The National Conference on Weights and Measures, Inc.," hereinafter called the "Corporation," and is incorporated under the laws of the Commonwealth of Virginia as a Virginia Nonstock Corporation.

Section 2 - Tax Exempt Status

This Corporation is organized as a not-for-profit business league under section 501(c)(6) of the Internal Revenue Code exclusively for not-for-profit purposes, including but not limited to improvement of business conditions, higher business standards and better business methods; promotion of uniformity in weights and measures laws, regulations, and practices; and sponsorship of educational and scientific programs. Such purposes are described in the Article II, "Goals," in these Bylaws. The Corporation is authorized, for not-for-profit purposes, to make distributions to organizations that qualify as exempt organizations under § 501(c) of the Internal Revenue Code, or the corresponding section of any future tax code. The Corporation is primarily supported by membership dues and registration fees paid by members to attend meetings of the Corporation.

No part of the net earnings of the Corporation shall inure to the benefit of, or be distributed to its members, directors, officers, or other private persons, except that the Corporation shall be authorized and empowered to pay reasonable compensation for services rendered and to make payments and distributions in furtherance of the purposes set forth in the Articles of Incorporation. No substantial part of the activities of the Corporation shall be the carrying on of propaganda, or otherwise attempting to influence legislation, and the Corporation shall not participate in, or intervene in (including the publication or distribution of statements) any political campaign on behalf of or in opposition to any candidate for public office. Notwithstanding any other provision of these Bylaws, and the Articles of Incorporation, the Corporation shall not carry on any other activities not permitted to be carried on (a) by a Corporation exempt from Federal income tax under section 501(c)(6) of the Internal Revenue Code, or the corresponding section of any future Federal tax code, or (b) by a corporation, contributions to which are deductible under the Internal Revenue Code as a trade or business expense ordinary and necessary in the conduct of the Corporation's business.

Section 3 - Fiscal Year

The fiscal year of the Corporation shall be October 1 through September 30 of the following year.

Section 4 - Dissolution

The Corporation shall dissolve in the event that the number of members falls below two hundred and fifty (250). Upon the dissolution of the Corporation, assets shall be distributed for one or more exempt purposes within the meaning of section 501(c)(6) of the Internal Revenue Code, or any corresponding section of any future Federal tax code, or shall be distributed to the Federal Government, or to a State or local government, for a public purpose. Any such assets not so disposed of shall be disposed of by a Court of Competent Jurisdiction of the county in which the principal office of the Corporation is then located, exclusively for such purposes or to such organization or organizations, as said Court shall determine, which are organized and operated exclusively for such purposes.

Section 5 - Relationship to the National Institute of Standards and Technology

The Corporation is in part self-supporting and in part sponsored by the Department of Commerce, National Institute of Standards and Technology (NIST), by means of a Memorandum of Understanding (MOU) ~~to be developed~~ between NIST and the Corporation. NIST sponsorship is under the authority of that portion of the Organic Act (U.S. Code, Title 15, Chapter 7, Section 272) authorizing NIST to undertake "cooperation with the States in securing uniformity in weights and measures laws and methods of inspection."

As employees of the United States government, NIST staff are precluded by ethics laws, including sections 207-209 of Title 18 of the United States Code, from serving as officers, board members or employees of the Corporation.

The MOU referenced above establishes a joint project between the Corporation and NIST called "The National Conference on Weights and Measures". The MOU also names the Director of NIST the Honorary President of this Conference and designates the Chief of the NIST Office of Weights and Measures as the Executive Secretary of the Conference. Under the MOU, on behalf of NIST, the Executive Secretary provides liaison between NIST and the Corporation; administers the NIST MOU and other cooperative agreements between NIST and the Corporation; advises the Corporation on technical and policy issues and oversees the Technical Advisors assigned to work with the various committees of the Conference; develops and does editorial review of publications of mutual interest as defined in the MOU; and assists in planning the agenda for the meetings of the Conference.

Article II - Goals

Section 1 - Goals

The goals of the National Conference on Weights and Measures, Inc., are:

- A. Enhance the National Conference on Weights and Measures, Inc., as a national and international resource for measurement standards development.
- B. Provide uniform training programs for industry and government individuals involved in legal metrology.
- C. Continue to develop new or alternative methods for improved delivery of weights and measures programs.
- D. Continue to expand the role of the Conference in national, and as a resource in international, legal metrology.

Section 2 - Regional Conferences

The Corporation is a National Conference which is associated and has a close affiliation with four regional Weights and Measures Conferences (Central, Northeastern, Southern and Western). The Corporation actively seeks representation from the four regions on its Board of Directors, standing and special purpose committees. The Corporation as a corporation has no legal connection with the four regional conferences.

Article III - Membership

Section 1 - Types of Membership

Membership consists of three classes: active, advisory, and associate.

Active Membership.

Applies to individuals in the employ of States, Commonwealths, Territories, or Possessions of the United States, their political subdivisions, the Navajo Nation, ~~or~~ **and** the District of Columbia who are actively engaged in the enforcement of weights and measures laws and regulations.

Advisory Membership.

Applies to (1) representatives of agencies of the Federal Government, (2) representatives of State and local governments other

than those involved in the enforcement of weights and measures laws and regulations, (3) foreign government officials, and (4) retired persons who are interested in the objectives and activities of the Corporation and who participate as individuals rather than as representatives of a particular industry or interest group.

Associate Membership.

Applies to representatives of manufacturers, industry, business, and consumers, and other persons who are interested in the objectives and activities of the Corporation and who do not qualify as Active or Advisory member.

Section 2 - Form of Application

Each application for membership in this Corporation shall be in the form prescribed by the Board of Directors.

Section 3 - Submission of Application

Applications for membership shall be submitted to the Corporation along with the appropriate membership fee. The membership will not be activated until the membership fee has been paid.

Article IV - Membership Fees and Records

Section 1 - Fee

The fee for annual membership, as well as the registration fee for each meeting of the Corporation, is fixed, and is subject to revision, by a majority vote of the Board of Directors at any official meeting of the Board.

~~Section 2 - Membership Year~~

~~Annual membership shall be payable by July 1 of each year and covers the period July 1 to June 30 of the following year.~~

Section 3 - Membership Records

The Board of Directors shall designate an individual or organization to be responsible for membership, including collection of membership fees and maintenance of membership records.

~~Section 4 - Billing~~

~~The Corporation shall bill each member for yearly dues 2 months prior to the expiration of the current membership year.~~

~~Section 5 - Evidence of Membership~~

~~Membership certificates and cards of suitable design, bearing the seal of the Corporation, shall be issued to members. The individual or organization designated by the Board shall advise the Treasurer of the count of new members and will forward the membership monies for deposit in the Corporation account.~~

Section 6 - Waiver of Registration and Membership Fees

Individuals who have retired after 10 or more years of weights and measures employment in either the public or private sectors, and who have attended at least one Annual Meeting, shall not be subject to the payment of the registration and membership fees.

The spouses of retired members shall enjoy the same privileges as spouses of active members.

Article V - Use of the Insignia

The insignia of the Corporation may be used or displayed only by members of the Corporation with express written approval from the Board of Directors.

Article VI - Directors

Section 1 - Directors

The Directors of the National Conference on Weights and Measures, Inc., shall be:

A. An 11-member Board of Directors consisting of:

Chairman,
Past-Chairman,
Chairman-Elect,
Treasurer, and

Seven other Directors: 4 directors to be elected from the active membership, the Nominating Committee will endeavor, where practical, to nominate one director from each of the 4 (four) regional Conferences, (Central, Northeastern, Southern and Western: the "Active Directors"); 1 director from the associate membership (the "Associate Director"); and 2 (two) at-large Directors, (the "at-large Directors") who may be elected from the Active, Advisory, or Associate membership who are eligible to serve.

The treasurer and the active, associate and at-large directors may be consecutively re-elected, however, the consecutive reelection of a Chairman and Chairman-Elect is prohibited. Should the Chairman-Elect for any reason be unable or unwilling to be installed as Chairman, his/her successor shall be elected by the Board of Directors. In this event, the newly elected Chairman-Elect shall be installed as Chairman.

Section 2 - Directors Eligibility

A. Any active member in good standing shall be eligible to hold the office of Chairman, Chairman-Elect, Past Chairman, Treasurer, and Active Director, provided that the individual meets the other requirements set forth in the Bylaws. Further, any Associate member is eligible to hold office as the Associate Director and any Active, Advisory, or Associate member is eligible to hold office as ~~the 2 an~~ at-large Directors.

B. The Chairman-Elect will be elected at the Annual Meeting 1 year prior to the term of service as Corporation Chairman. After serving 1 year as Chairman-Elect, the incumbent will succeed to the office of Corporation Chairman.

Section 3 - Nominations and Elections

A. Nominating Committee

Each year prior to the Corporation's Interim Meeting, the Chairman shall appoint a Nominating Committee. The Past Chairman will serve as Chairman of the Nominating Committee.

B. Nominations

1. The Nominating Committee shall submit one name for each elective office and present its recommendation as a slate in its report to the Corporation.
2. Additional nominations for officers may be made from the floor at the Annual Meeting provided that prior consent of the nominee has been obtained in writing and presented to the presiding officer at the time of the nomination.

C. Elections

Directors shall be elected during a designated session of the Annual Meeting by a formal recorded vote of the members in attendance and eligible to vote on Corporation motions.

See Bylaws, Article X - Voting System

D. Terms of Office

1. The Chairman, Chairman-Elect, Past Chairman, and Treasurer, shall serve for a term of 1 year or until their successors are respectively elected or appointed and qualified. The Treasurer may be re-elected. The seven other directors may be re-elected. The seven other directors shall serve for 5-year terms; except for the Associate Director, who shall serve a 3-year term. Elections shall take place at such intervals as is ~~are~~ necessary to retain an 11-member Board at all times, except that vacancies shall be filled under Section 3, paragraph E, below. ~~The seven other Directors may be re-elected.~~

2. All Directors shall take office immediately following the close of the Annual Meeting at which they were elected.

E. Filling Vacancies

In case of a vacancy in any of the elective offices, the Chairman (or, if the vacancy is for the Chairman's position, the immediate Past-Chairman) shall nominate a replacement, and that person shall be appointed to fill the office if a majority of the members of the Board approve the nomination.

Section 4 - Insurance and Indemnification of Directors

A. Insurance

The Board of Directors is authorized to purchase insurance, including but not limited to, general liability insurance, errors and omissions insurance, and directors and officers liability insurance, together with any other insurance deemed by the Board to be reasonable, in such sums and for such premiums as the Board determines are appropriate.

B. Indemnification

The Corporation shall indemnify and hold harmless (to the fullest extent permitted by applicable law as it presently exists or may hereafter be amended) any person who was or is made or is threatened to be made a party or is otherwise involved in any action, suit or proceeding, whether civil, criminal, administrative or investigative (a "proceeding") by reason of the fact that he/she, or a person for whom he/she is the legal representative, is or was a director, officer, employee or agent of this Corporation against all expenses, liability, and loss reasonably incurred or suffered by such person. The Corporation shall be required to indemnify and advance expenses to a person in connection with a proceeding initiated against such person only upon approval by the Board of Directors of the Corporation.

The Corporation shall prepay the expenses incurred in defending ~~and~~ any proceeding in advance of its final disposition.

If a claim for indemnification or prepayment of expenses under this Section is not paid in full within ninety days after a written claim therefor has been received by the Corporation the claimant may file suit to recover the unpaid amount of such claim and, if successful in whole or in part, shall be entitled to be paid the expenses of prosecuting the claim. In any such action the Corporation shall have the burden of proving that the claimant was not entitled to the requested indemnification or payment of expenses under applicable law.

The rights conferred on any person by this Section shall not be exclusive of any other rights which such person may have or hereafter acquire under the statute, provision of the Articles of Incorporation, these Bylaws, agreement, vote of members or disinterested directors or otherwise.

Any repeal or modification of the foregoing provisions of this Section shall not adversely affect any right or protection of a director, officer or employee of the Corporation at the time of such repeal or modification.

Board of Directors

Section 5 - Removal of Directors

A director may be removed for cause upon a vote for his or her removal by a majority of the Board at a properly called meeting of the Board. Removal for cause shall include, but not be limited to, failure by the Director to attend two consecutive meetings of the Corporation. For purposes of this section, two consecutive meetings shall mean annual or interim meetings of the Corporation.

Section 6 - Appointive Officials

A. The Corporation Chairman will annually appoint the following officials:

Four (4) Presiding Officers
Chaplain
Parliamentarian
Two (2) Sergeants-At-Arms

B. Assumption of Office

All appointive officials shall take office immediately following appointment and will serve through the subsequent Annual Meeting of the Corporation unless otherwise specified by the Corporation Chairman.

Article VII - Duties of the Directors and Appointive Officials

Section 1 - Chairman

The Corporation Chairman has the role of Chief Executive Officer of the Corporation and, as such, has the broad authority customarily associated with that role, including, but not limited to, the authority to make policy decisions on behalf of the Corporation and take such actions as are necessary to put these decisions into effect. The Chairman is the principal presiding officer at the meetings of the Corporation and of the Board of Directors, makes appointments to the several standing and special purpose committees, and appoints other Corporation officials to serve during his or her term of office.

All contracts or other obligations requiring Corporation funding must be signed by the Chairman or his or her designee.

Section 2 - Chairman-Elect

The Chairman-Elect will:

- A. serve as acting Corporation Chairman in the event that the Chairman is unable to carry out the duties of that office,
- B. perform other duties assigned by the Corporation Chairman,
- C. serve on the Board of Directors,
- D. prepare and develop a budget for review by the Board.
- E. review ad hoc committees, sub-committees, task forces, and study groups to make a recommendation to the Board as to the continuance of these committees.

Section 3 - Presiding Officers

The four Corporation Presiding Officers preside over sessions of the meetings of the Corporation as assigned by the Corporation Chairman and assist the Chairman in the discharge of his or her duties.

Section 4 - Executive Secretary

The Executive Secretary has those responsibilities that are assigned to the office pursuant to Article I, Section 5.

Section 5 - Treasurer

~~The Treasurer receives and accounts for all monies collected and pays all Corporation bills certified as correct by the individual or organization responsible for this task, as designated by the Chairman.~~

The Treasurer ensures the integrity of the fiscal affairs of the Corporation and serves on the Board of Directors of the Corporation. The Treasurer performs other duties as assigned by the Chairman.

The Treasurer may appoint, with approval of the Board, an assistant to assist the Treasurer in the discharge of his or her duties.

Section 6 - Chaplain

The Chaplain performs the customary duties of that office.

Section 7 - Parliamentarian

The Parliamentarian shall assist in assuring meetings of the Corporation are conducted in a proper manner. The rules contained in Robert's Rules of Order shall govern the Corporation in all cases to which they are applicable, and in which they are not inconsistent with these Bylaws.

Section 8 - Past Chairman

The most recent still-active Past Chairman will serve as Chairman of the National Type Evaluation Program (NTEP) Committee and appoint active, advisory, and associate members to the technical committees of the NTEP program. The Past Chairman will also serve as Chairman of the Nominating Committee.

Section 9 - Sergeants-At-Arms

The Sergeants-At-Arms help preserve order during the public sessions of the Corporation Annual Meeting. Their responsibilities include ensuring that only registered delegates are present and that individuals or groups appearing before the Corporation are properly identified.

Article VIII - Meetings of the Corporation

Section 1 - Annual Meeting

The Annual Business Meeting of members shall be held at the annual meeting of the Corporation. Notice of the annual meeting shall be given in accordance with the provisions of Va. Code § 13.1-842. Notice shall be no less than 10 nor more than 60 days before the date of the meeting, except that notice to act on an amendment to the Articles of Incorporation, a plan of merger, a proposed sale of assets pursuant to § 13.1-900 or the dissolution of the Corporation shall be given not less than 25 nor more than 60 days before the date of the meeting.

The agenda for this meeting shall include the election of the Board of Directors, ~~approval of the Annual Report for filing, and~~ reports from the Chairman and the Treasurer.

The Annual Technical Meeting shall also be held at the Annual meeting of the Corporation and may include reports from various committees, task forces, study groups, and other items pertinent to the Corporation, as well as the presentation of technical papers, discussions, displays, entertainment, or other events at the discretion of the Board of Directors.

Board of Directors

Section 2 - Interim Meetings

The Interim Meetings of the Board of Directors and those Standing Committees designated by the Chairman shall be held annually, approximately 6 months prior to the Annual Meeting in order to develop the agenda and committee recommendations to be presented to and acted on by the membership at the Annual Meeting.

Section 3 - Special Meetings

A. The Corporation Chairman is authorized to order a meeting of the Board of Directors at any time such a session is deemed by the Chairman to be in the best interests of the Corporation. Such meeting may, ~~in at the discretion of the Chairman~~, take place in any manner technologically possible, including, but not limited to, telephone conference calls and electronic mail. A quorum shall consist of 7 members of the Board. Voting may be cast in any manner prescribed by the Chairman.

B. Other Committees of the Corporation are authorized to hold meetings at times other than the Annual Meeting or Interim Meeting provided that:

1. such meeting or meetings have been provided for in the Corporation budget approved by the Board of Directors, or
2. such meeting or meetings are approved by the Chairman and funding is available within the approved budget, or
3. such meeting or meetings are approved by the Chairman and the Board of Directors including agreement to increase the budget to cover the cost of the meeting.

Section 4 - Rules of Order

The rules contained in Robert's Rules of Order shall govern the Corporation in all cases to which they are applicable, and in which they are not inconsistent with these Bylaws.

Article IX - Committees

Section 1 - Special Purpose Committees

The Special Purpose Committees consist of the following:

A. **Nominating Committee.** The Nominating Committee (referenced in Article VI, Section 3) shall be appointed annually by the Chairman and shall consist of the most recent active Past Chairman of the Corporation as Committee Chairman and six active members, to include at least one member representing each of the four regions. The nominating committee shall make recommendations to the Corporation for nominations for the Board of Directors. The nominating committee shall give due weight and consideration to the recommendation of the Associate Membership Committee regarding the Associate Director nomination.

B. **Resolutions Committee.** The Resolutions Committee shall be appointed by the Chairman and shall consist of three members appointed for 3-year staggered terms.

~~C. **Finance Committee.** The Finance Committee shall be comprised of the Treasurer and the two At-Large Directors. Each member's term on the Finance Committee shall coincide with the member's term as Director.~~

~~E. **Auditing Committee.** The Auditing Committee shall be appointed by the Chairman and shall consist of three members appointed for 3-year staggered terms.~~

E. **D. Associate Membership Committee.** The Associate Membership Committee shall consist of not less than five nor more than 10 members, appointed by the Corporation Chairman from the associate membership. This Committee shall represent a cross-section of interests within the associate membership. The Associate Membership Committee shall make a recommendation to the ~~Nominating Committee~~ Chairman for a nomination for the Laws and Regulations Committee and the Administration and Public Affairs Committee. ~~as well as a~~ The Associate Membership Committee shall also make a recommendation for the Associate Director nomination every three years, or in the event of a vacancy to fill the unexpired term. The Associate Membership Committee may also make a recommendation to the Nominating Committee for an "At Large" Director nomination.

D. E. Credentials Committee. The Credentials Committee shall consist of three members all of whom are appointed by the Corporation Chairman from the active membership, and shall consist of at least one member from a State jurisdiction and one member from a city or county jurisdiction, serving on a rotating basis for 3 year terms (a new member appointed each year to replace the member whose term expires). The senior member serves as Committee Chairman.

Section 2 - Standing Committees

The Board of Directors may create and disband standing committees in the best interests of the Corporation. As referenced in Article IX, Section 1, the Chairman makes appointments to the several special purpose committees. The current standing committees are:

Committee on Specifications and Tolerances;
Committee on Laws and Regulations; and
Committee on Administration and Public Affairs.

A. Membership

The membership of each of the standing committees consists of five members, at least one member from each of the four weights and measures regions, appointed by the Corporation Chairman from the active membership on a rotating basis for 5 year terms, or until a successor is appointed. In addition, every fifth year the Corporation Chairman shall appoint a nonvoting Associate Member Representative (AMR) to the Committee on Laws and Regulations and the Committee on Administration and Public Affairs. The AMR shall be nominated by the Associate Membership Committee and shall serve a 5-year term, or until a successor is appointed.

When it is necessary to make an appointment to any of the standing committees to fill a vacancy caused by the death, resignation, or retirement from active service by a committee member, the appointment is for the unexpired portion of the member's term.

Except as noted, each standing committee annually selects one of its active members, preferably its senior member, to serve as its chairman.

Section 3 - National Type Evaluation Program (NTEP) Committee

The NTEP Committee is comprised of eight members, from the active members of the Board of Directors, that is, the Past Chairman as Chairman of the NTEP Committee, the Chairman, the Chairman-Elect, the Treasurer, and the four Active Directors. In the event of a tie vote, the Chairman of the NTEP Committee shall have the deciding vote.

The NTEP Committee fixes the annual maintenance fee for retaining a National Type Evaluation Program Certificate of Conformance. The NTEP Committee is responsible for the operation of the NTEP program with respect to its fiscal management, providing guidance related to the activities of the program and establishing policy and procedures.

Through the Chairman of the NTEP Committee, members are appointed from the Advisory, Active, and Associate Members to the Technical Committees of the National Type Evaluation Program. The Advisory members represent the interest of manufacturers, retail sales organizations, and users of commercial devices. The Active members represent the interest of government officials and the consumer. These committees make technical, policy, and procedural recommendations to the NTEP Committee for implementation.

Section 4 - Ad Hoc Committees, Subcommittees, Task Forces, and Study Groups

Ad Hoc committees, subcommittees, task forces, and study groups are appointed by the Corporation Chairman from the active, advisory, or associate membership, in any combination, as the need arises or the Corporation requests. All committees are subject to an annual review by the Board.

Section 5 - Duties and Fields of Operation of Board of Directors and Committees

A. Board of Directors

The Board of Directors is the governing body of the Corporation and is authorized to make all decisions relating thereto, including but not limited to the following:

1. conducts the business of the National Conference on Weights and Measures, Inc., as a Corporation, which at a minimum includes (a) overseeing the preparation and approval of the annual report ~~by the members~~ for filing with the Virginia State Corporation Commission in compliance with Va. Code §13.1-936, and (b) payment of the annual registration fees prescribed in Va. Code §13.1-936.1.
2. reviews and approves the budget.
3. selects the place and dates, and also fixes the registration fee for each meeting of the Corporation;
4. fixes the annual membership fee; and
5. advises the responsible individual or organization, as designated by the Chairman, with respect to the programs for the meetings of the Corporation and its committees, and makes recommendations to the Corporation, the Corporation officers, and the committee chairmen.

The Board of Directors, in the interval between meetings of the Corporation:

1. authorizes meetings of Corporation committees in accordance with the provisions of Article VIII, Section 3,
2. authorizes expenditures that are not in the budget, and
3. acts for the Corporation in all routine or emergency situations that may arise.

Special meetings of the Board may be held ~~in at~~ the discretion of the Chairman, and may take place in any manner technologically possible, including, but not limited to, telephone conference calls and electronic mail. A quorum shall consist of 7 members of the Board. Voting may be cast in any manner prescribed by the Chairman. All questions before the Board of Directors will be decided whenever practical, by voice vote or by ballot, and will be decided on the basis of the majority of votes cast.

The Board serves as a policy and coordinating body in matters of national and international significance which may include such areas as metrication; the interaction with organizations such as the International Organization of Legal Metrology (OIML), American National Standards Institute (ANSI), International Organization for Standardization (ISO), American Society for Testing and Materials (ASTM), National Conference of Standards Laboratories (NCSL), and such internal matters as may be required, including, for example, the Retiree Organization.

The Chairman, on behalf of the Board, annually presents a report on Corporation activities.

B. Committee on Laws and Regulations

The Committee on Laws and Regulations annually presents a report for Corporation action.

Its scope embraces all matters within the area of weights and measures supervision including:

1. the development and interpretation of uniform laws and regulations;
2. the study and analysis of bills for legislative enactment;
3. the establishment and maintenance of published guidelines and other effective means of encouraging uniformity of interpretation and application of weights and measures laws and regulations; and

4. liaison with Federal agencies, State agencies, and other groups or organizations on issues within the purview of the Committee. This role entails explaining, advocating, and coordinating Corporation positions, recommendations, and needs before Federal Government agencies, consumer groups, the associate NCWM membership, domestic and international standards organizations, industry, trade associations, and others. The goals are to provide and solicit information, develop a spirit of cooperation, and promote uniformity with the activities and standards of the NCWM.

C. Committee on Specifications and Tolerances

The Committee on Specifications and Tolerances annually presents a report for Corporation action.

Its scope embraces all matters dealing with:

1. specifications, tolerances, and technical requirements of any kind relating to scales, weights, measures, and weighing and measuring devices and accessories, including interpretation of such material whenever necessary,
2. standards and testing equipment for weights and measures officials,
3. procedures for testing commercial equipment, and
4. liaison with Federal agencies, State agencies, and other groups or organizations on issues within the purview of the Committee. This role entails explaining, advocating, and coordinating Corporation positions, recommendations, and needs before Federal Government agencies, consumer groups, the associate NCWM membership, domestic and international standards organizations, industry, trade associations, and others. The goals are to provide and solicit information, develop a spirit of cooperation, and promote uniformity with the activities and standards of the NCWM.

D. Committee on Administration and Public Affairs

The mission of the Committee is:

To provide leadership to develop and implement uniform, quality weights and measures services in the areas of:

- effective program management,
- education, and
- public relations.

The Committee on Administration and Public Affairs annually presents a report for Corporation action.

Its scope embraces all matters dealing with:

1. development and recommendation of administrative procedures;
2. education and training of weights and measures officials;
3. promotion of weights and measures principles and techniques among users of weights and measures devices and the general public; and
4. liaison with Federal agencies, State agencies, and other groups and organizations on issues within the purview of the committee. This entails explaining, advocating, and coordinating Corporation positions, recommendations, and needs before Federal Government agencies, consumer groups, the Associate NCWM membership, domestic and international standards organizations, industry, trade associations, and others. The goals are to provide and solicit information, develop a spirit of cooperation, and promote uniformity with the activities and standards of the NCWM.

E. Nominating Committee

The Nominating Committee annually presents a slate of nominees for all elective offices. The names of these nominees shall appear in the report of the Nominating Committee and shall be published in the Program and Committee Reports for the annual meeting of the Corporation.

Board of Directors

F. Resolutions Committee

Each year at the Annual Meeting of the Corporation, the Resolutions Committee presents for Corporation action such resolutions as it has been directed by the Corporation to prepare, and such additional resolutions as are deemed appropriate by the Committee.

G. ~~Auditing~~ Finance Committee

The ~~Auditing~~ Finance Committee may appoint an external auditor to audit the books of the Corporation and, if an auditor is appointed, will evaluate the recommendations of the auditor and recommend an action thereon to the Board.

G. H. Credentials Committee

The Credentials Committee administers the Corporation voting system, makes decisions concerning disputed rights of designated representatives, and approves or certifies representatives to the House of State Representatives.

H. I. Associate Membership Committee

The Associate Membership Committee annually reports on its activities and makes recommendations to the Board of Directors.

The Associate Membership Committee will make a recommendation to the Nominating Committee regarding the Associate Director position on the Board, and may make a recommendation regarding the "At Large" Director position on the Board, as well as a recommendation to the Chairman for a nomination to the Laws and Regulations Committee and the Administration and Public Affairs Committee. Such recommendations are provided for in Article IX, Section 1 (D).

The Committee provides coordination and participation of associate members in all business and social affairs of the Corporation.

Article X - Voting System

In the case of business issues relating to NCWM, Inc., as a Corporation, all questions before a meeting of the Corporation are to be decided by voice vote of members of all three houses.

Members of all three houses may speak to all issues on the floor, both business and technical issues. However, the adoption of final reports of committees on technical issues, as well as other technical issues, are to be decided by a formal recorded vote of the active members in accordance with the following voting structures and procedures.

Section 1 - House of State Representatives

A. Official Designation

This body of Active members who are officially designated by their States and are present and registered at the Annual Meeting shall be known as the "House of State Representatives."

The House of State Representatives shall vote, as well as the House of Delegates, and the House of General Membership, on all business issues relating to NCWM, Inc., as a Corporation.

The House of Representatives and the House of Delegates alone will vote on all technical questions before the Corporation, including reports and recommendations of all of the Standing Committees (namely, the Specifications and Tolerances Committee, the Laws and Regulations Committee, and the Administration and Public Affairs Committee) and the NTEP committee, as well as all other technical issues relating to weights and measures; technical handbooks; and legal metrology.

B. Composition

Each State is authorized one official to serve as its representative at the Annual Meeting of the NCWM. The State weights and measures director, or his or her designee (State or local government official), is the State representative.

The District of Columbia, the Navajo Nation, and the U.S. Commonwealths and Territories that have weights and measures programs similar to those of the States (for example, have followed the uniform laws and regulations and have adopted Handbook 44) are also allowed representatives.

C. Method of Designation

Each representative is specified annually to the Credentials Committee 30 days before the NCWM Annual Meeting. Accommodation may be made for exceptions to this deadline. An alternate should be named prior to the NCWM Annual Meeting in case the designated representative cannot attend.

Section 2 - House of Delegates

Official Designation

All other Active members present and registered at the Annual Meeting (those not sitting in the House of State Representatives) are grouped as a body known as the "House of Delegates." The House of Delegates shall vote, as well as the House of Representatives and the House of General Membership, on all business issues relating to NCWM, Inc., as a Corporation.

~~The House of Delegates and the House of Representatives alone will vote on all technical questions before the Corporation, including reports and recommendations of all of the Standing Committees (namely, the Specifications and Tolerances Committee, the Laws and Regulations Committee, and the Administration and Public Affairs Committee) and the NTEP Committee as well as all other technical issues relating to weights and measures; technical handbooks; and legal metrology. All members of the Corporation, including Associate Members, will vote on all business issues before the Corporation. The determination as to whether an issue is technical or business shall be made by the Board in accordance with the policies and procedures of the Corporation.~~

Section 3 - House of General Membership

Official Designation

This body shall comprise Associate and Advisory members of NCWM, Inc., who are present and registered at the Annual Meeting. The House of General Membership shall vote, as well as the House of Representatives and the House of Delegates on all business issues relating to NCWM, Inc., as a Corporation. The House of General Membership shall not vote on technical questions before the Corporation, which includes reports and recommendations of all of the Standing Committees (see Article IX, Section 2) and all other technical issues relating to weights and measures; technical handbooks; and legal metrology.

Section 4 - Minimum Votes

A. House of State Representatives

A minimum of 27 votes in favor of, or 27 votes in opposition to, an issue must be cast for the vote to be considered official. If 54 or more votes are cast in the House of State Representatives, a simple majority of the total votes is required to pass (or defeat) the issue.

B. House of Delegates

A minimum of 27 votes in favor of, or 27 votes in opposition to, an issue must be cast for the vote to be considered official. If more than 54 total votes are cast, a simple majority rules. Should a tie vote occur, or if the minimum votes in support or opposition are not cast, the issue is decided by the vote of the House of State Representatives.

Board of Directors

~~C. House of General Membership~~

~~A minimum of 27 votes in favor of, or 27 votes in opposition to, an issue must be cast for the vote to be considered official. If more than 54 total votes are cast, a simple majority rules. Should a tie vote occur, or if the minimum votes in support or opposition are not cast, the issue is decided by the vote of the House of State Representatives.~~

Section 5 - Voting Rules

A. Quorum

A quorum shall consist of 27 eligible voting members in the House of State Representatives.

B. Proxy Votes

Proxy votes are not permitted. Since issues and recommendations in the committees' interim reports are often modified and amended at the NCWM Annual Meeting, the attendance of officials at the ~~NCWM~~ Annual Meeting and voting sessions is vital.

C. Method

For voting on business issues relating to NCWM, Inc., as a Corporation, all voting is by a voice vote of the members eligible to vote. For voting on the adoption of final reports of committees on technical issues, as well as for voting on all other issues, and in the event that the voice vote is too close to be determined in the opinion of the Chairman, there shall be a show of hands, standing vote, or machine (electronic) vote count. No abstentions are recorded.

D. Timing

Voting by all Houses is simultaneous.

E. Recording

The voting system which shall be used, except in the case of a voice vote, is designed to record the votes of voters, whether an electronic system, show of hands, or standing vote is used.

F. Applicability

These procedures (rules) apply only to the plenary (general) sessions of the NCWM.

Section 6 - Committee Reports

Alternatives that may be used in voting on the reports:

- A. vote on the entire report,
- B. vote on grouped items or sections, or
- C. vote on individual items; according to
 - 1. committee discretion, or
 - 2. on request by a voting delegate, with the support of 10 others.

Section 7 - Amendments and Changes

A. Technical Items

1. Changes

Committee chairmen may offer changes to their final reports on the day of voting.

2. Amendments

Substantive amendments can be made at the request of weights and measures officials only, and:

- a. a majority of the voting delegates of the House of State Representatives and the House of Delegates must vote favorably before a proposed amendment can be accepted for debate.
- b. A two-thirds favorable vote of the House of State Representatives and the House of Delegates on the amendment is required for passage (the requirement for a minimum vote of 27 in each House also applies).

B. Business Items

1. Changes

Committee or Board members may offer editorial changes to their final reports on the day of voting.

2. Amendments

Substantive amendments can be made at the request of any member, and:

- a. a majority of the voting delegates of each House must vote favorably before a proposed amendment can be accepted for debate.
- b. a two-thirds favorable vote of each House on the amendment is required for passage (the requirement for a minimum vote of 27 in all three Houses also applies).

Section 8 - Seating

A. Arrangement

The seating arrangement for voting sessions is shown in the diagram following Article XI of these bylaws.

B. Supervision

The members of the Credentials Committee will count votes and control placement and movement of delegates.

Section 9A - Voting - Technical Issues

At the conclusion of debate (if authorized) on a motion, there shall be a call for the vote by voice vote, a show of hands, standing, or electronic count.

A. Motion Accepted If:

1. a minimum of 27 members of the House of State Representatives votes Yea.

And If

2. a majority of the members of the House of Delegates votes Yea (a minimum of 27 Yea votes required);¹

And, in the case of motions relating to business items, If

3. a majority of the members of the House of General Membership votes Yea (a minimum of 27 Yea votes required).¹

B. Motion Rejected If:

1. a minimum of 27 members of the House of State Representatives votes Nay

Board of Directors

And If

2. a majority of the members of the House of Delegates votes Nay (a minimum of 27 Nay votes required);¹

And, in the case of motions relating to business items, If

3. a majority of the members of the House of General Membership votes Nay (a minimum of 27 Nay votes required).¹

C. Split Vote:

When a split vote is recorded or the minimum number of votes supporting or opposing an issue is not obtained in the House of State Representatives, the issue is returned to the Standing Committee for further consideration, except when there is a split vote on approval of the annual report for filing with the Virginia State Corporation Commission. In the case of a split vote on the filing of the annual report, the vote of the Chairman on the filing of the report shall prevail.

Except for the annual report, the Committee may drop the issue or reconsider it for submission the following year. The issue cannot be recalled for another vote at the same Annual Meeting.

Section 9B - Voting - Business Issues

At the conclusion of debate (if authorized) on a motion, there shall be a call for the vote by voice vote. In the event that a voice vote is too close to be determined in the opinion of the Chairman, there shall be a show of hands, standing vote, or machine (electronic) vote count.

A. Motion Accepted If:

1. a majority of those members present and voting vote Yea.

B. Motion Rejected If:

1. a majority of those members present and voting vote Nay.

In the case of a tie vote, the vote of the Chairman shall prevail.

Section 10 - Procedures

The Corporation officers and committees observe in all of their procedures the principles of due process -- the protection of the rights and interests of affected parties; specifically, they: (a) give reasonable advance notice of contemplated committee studies, items to be considered for committee action, and tentative or definite recommendations for Corporation action, for the information of all parties at interest, and (b) provide that all interested parties have an opportunity to be heard by committees and by the Corporation.

Article XI - Amendments

These Bylaws may be amended, added to, or repealed at any Annual Meeting of the membership under normal Corporation procedures. Proposed changes must be ~~included in the Agenda of the Board of Directors for the Interim Meetings;~~ published in the recommendations of the Board of Directors in its Interim Report (contained in the Program for the Annual Meeting, NCWM Publication 16); and discussed at the open hearing of the Board of Directors at the Annual Meeting at which said changes will be voted on. Amendments to the Bylaws must be approved by a minimum of a simple majority vote ~~in all three Houses; the House of State Representatives, the House of Delegates and the House of General Membership of the general membership in attendance.~~

¹ If the minimum number of votes required to pass or fail an issue is not cast in the House of Delegates or the House of General Membership, the issue will be determined by the vote of the House of State Representatives.

Front of Room

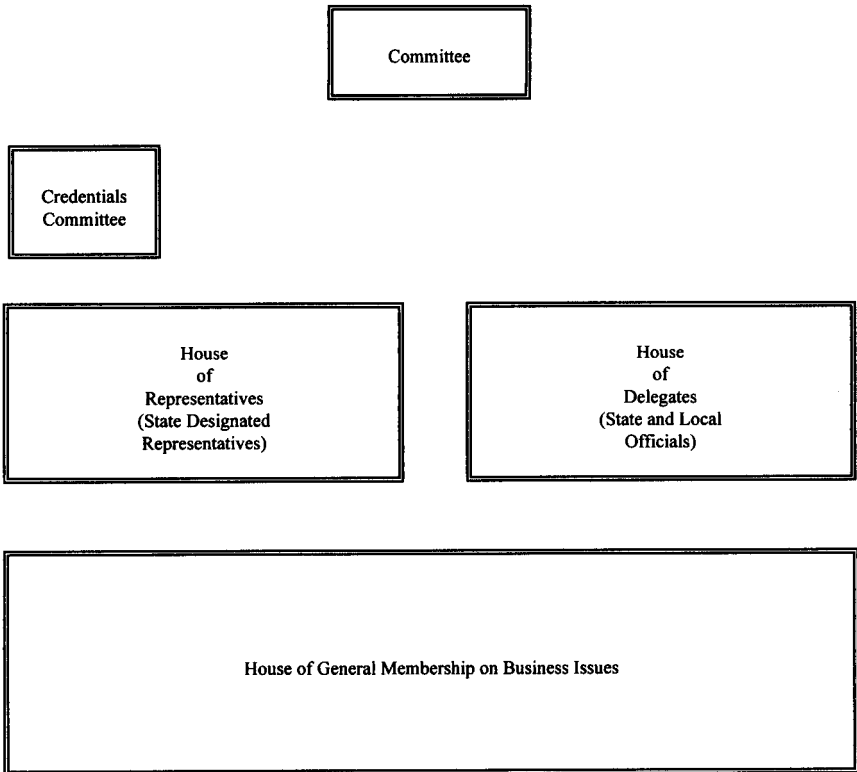


Figure 1. Seating Arrangement

Appendix D
International Organization of Legal Metrology (OIML) and
Asia-Pacific Legal Metrology Forum (APLMF) Reports

Report on OIML
By Samuel E. Chappell, Chief
Technical Standards Activities Program
Office of Standards Services, NIST
July 1999

33rd Meeting of the International Committee of Legal Metrology (CIML)

Representatives of 43 of the 56 member nations participated in the CIML meeting from October 28 to 30, 1998, in Seoul, Federal Republic of Korea. Mr. James Truex of Ohio was a member of the U.S. Delegation and also represented the National Conference on Weights and Measures.

Reports on the following items were presented:

Technical Activities

- Dr. Chappell reported on the status of the projects in the various OIML Technical Committees, and he emphasized the importance of keeping the work current. Therefore, in the 1998 Annual Reports on the status of the work projects of the various Technical Committees, the Secretariats will be requested to also report on plans to reaffirm or revise any Recommendations or Documents that are more than 5 years old.

- CIML approved the following five draft Recommendations:

PR-1 Addendum (test procedures and test report format) for R 101 "Indicating and recording pressure gauges, vacuum gauges, and pressure-vacuum gauges with elastic sensing elements (ordinary instruments)."

Pr-2 Addendum (test procedures and test report format) for R 109 "Pressure gauges and vacuum gauges with elastic sensing elements (standard instruments)"

PR-3 "Radiochromic film dosimetry system for ionizing radiation processing of materials and products" (prepared by the U.S.A.)

PR-5 "Focimeters" (revision of OIML R 93)

PR-6 "Ergometers"

OIML Certificate System

M. Kochsiek reported on the Certificate System including the new Recommendations to be added to the System and provided the numbers of Certificates issued for the various categories of instruments that are now a part of the System. The International Bureau of Legal Metrology (BIML) prepares a notice in the Quarterly OIML Bulletin of the Certificates issued. BIML prepares an annual written report to CIML that identifies the issuing authorities in member nations for Certificates for pattern approval of instruments covered by Recommendations currently included in the System.

Member States and Corresponding Members

- The Republic of South Africa, a new member, was officially represented at this meeting. Guatemala and Madagascar have recently joined as corresponding members. Croatia is in the process of accession as a member of the Convention.

- BIML reported on a proposal regarding the possibility of corresponding members participating as observers in CIML meetings and in the work of some of the technical committees. The CIML approved this proposal and requested that the President and BIML draft appropriate rules for such participation that would take into consideration CIML members' comments.

Developing Countries

M. Kochsiek reported on the Development Council meeting that took place before the CIML meeting and also reported on the Symposium on the "Role of Metrology in Economic and Social Development" at the Physikalisch-Technische Bundesanstalt (PTB) in Germany in June 1998, which was sponsored by PTB, OIML, BIPM, and the International Measurement Confederation (IMEKO). BIML reported on the activities of the Development Council from its initiation in 1978 to the present. Mrs. Annabi, CIML member for Tunisia, was elected Chair of the Development Council. She presented a draft plan of action to CIML members for comment. In consideration of the comments received, an amended draft action plan will be prepared with support of the BIML staff and distributed to CIML for comment and approval by correspondence.

Mutual Acceptance Agreement for OIML Certificates and Test Reports

Dr. Chappell reported on the activities of the ad hoc working group established to examine the issue of "accreditation" and related matters. In particular, he reported on the April 1998 meeting at NIST of representatives of 10 OIML member countries and BIML at which a "Mutual Agreement to Accept and Utilize OIML Certificates and Associated Test Reports" was discussed. A timetable for action plans for this work was presented. It was recommended that this work being carried out by an ad hoc working group should be established under either an existing or new Technical Committee. Action will be taken to implement this recommendation. The plans will be presented to CIML for consideration for approval at its next meeting in October 1999.

Liaisons

The President, various CIML members, and the Director of BIML reported on liaisons with various international and regional bodies including the Mètre Convention (the Joint Working Group), International Laboratory Accreditation Cooperation (ILAC), the Joint Committee for Guides in Metrology (JCGM), the International Organization for Standardization (ISO), the International Electrotechnical Commission (IEC), the International Accreditation Forum (IAF), the World Trade Organization (WTO), the Western European Legal Metrology Cooperation (WELMEC), the Inter-American Metrology System (SIM), APLMF, and others. In particular, the request from APLMF to give priority to certain work projects was noted.

Report on BIML Activities.

B. Athané provided a written report on BIML activities since the last CIML meeting. This report will be printed in the next OIML Bulletin.

Other Matters

- A meeting of the Presidential Council was scheduled for February 16 to 17, 1999. In addition to reviewing the status of the work, a recommended long-range plan will be developed based on the Birkeland Report and the Development Seminar held at PTB in June 1998.

- The CIML reelected Mr. Kochsiek to be one of the two Vice Presidents for another term to end in 2003 and appointed Ian Dunmill of the U.K. as a BIML Assistant Director to replace Nathalie Dupuis-Désormeaux of Canada who resigned as of October 31, 1998. Mr. Dunmill is expected to report to BIML in early 1999.

- Mr. Magana, CIML member for France, announced that he would be organizing a OIML Seminar on "software" to be held in Paris on September 30 and October 1, 1999. Deborah Ripley will represent NIST, and Charles Gardner, Suffolk County, NY, will represent the NCWM and present a paper on the status of this subject within the NCWM.

34th Meeting

The 34th meeting of CIML will be held in Tunis, Tunisia, from October 6 to 8, 1999. A meeting of the OIML Development Council will be held on October 5.

Presidential Council Meeting

The CIML Presidential Council met at BIML in Paris on February 16 and 17, 1999. The state of progress of OIML technical committees and subcommittees and their approved projects were reviewed as reflected in the annual reports submitted by the Secretariats. Other topics addressed included a detailed review of the long-term plans for OIML based on the Birkeland Report. In the discussion, assistance to developing countries and the effective means for general communication of the OIML work program were also considered.

Activities of OIML Secretariats

This part of the report provides: (1) an identification of work, either Recommendations (Rs) or Documents (Ds), being developed in Technical Committees (TCs) and Technical Subcommittees (SCs) of specific interest to the NCWM and (2) a schedule of activities of Secretariats, the U.S. National Working Groups (NWGs), and the International Working Groups (IWGs) of committees and subcommittees that have recently taken place or are planned for the near future. Deborah Ripley, NIST, reported more details of these activities to the NCWM Specifications and Tolerances Committee.

TC1 Terminology (Poland)

The Secretariat distributed a third CD revision of the "Vocabulary of Legal Metrology" (1978 Edition) for review and comment by May 1998. A meeting to discuss this work was held in November 1998 in Warsaw, Poland. The United States was not represented at the meeting, but sent comments on the draft revision.

TC3 Metrological Control (U.S.A.)

A task group meeting was held in February 1999 after the meeting of the CIML Presidential Council on "accreditation of legal metrology activities." Representatives of Australia, France, Germany, Netherlands, Russia, the United Kingdom, and the U.S.A. participated. A third draft OIML Document "Mutual Acceptance Agreement on OIML Pattern Evaluations" prepared by the United States was discussed. The decisions of this meeting led to development of a 4th draft Document on the subject that was discussed at a subsequent meeting in June 1999 in Paris at an international working group meeting of OIML TC3 "Metrological Control." The Secretariat chaired that meeting, which a total of 40 people representing 17 OIML member nations and 2 liaison organizations attended. A resolution of the meeting was that this work should be organized under a new subcommittee, OIML TC3/SC5 "Conformity Assessment" for which the United States and the International Bureau of Legal Metrology will be the co-secretariat. The work program for OIML TC3/SC5 will be presented to CIML for consideration at its 34th meeting in Tunisia in October 1999.

TC6 Prepackaging (U.S.A.)

The Secretariat is preparing a first CD revision of OIML R87 "Net Content in Packages." A meeting for consultation with European experts has been scheduled in September 1999 to discuss EU regulations for prepackaged products so as to achieve harmonization of U.S. and EU requirements in the revised R87.

TC7 Instruments for Measuring Length and Associated Quantities (United Kingdom)

- TC7/SC5 Multi-dimensional Measuring Instruments (Australia)

The U.S.A. responded with a yes vote and comments to BIML on the draft OIML Recommendation on "Multi-dimensional Measuring Instruments" prepared by Australia in March 1999. This draft Recommendation will be further considered for approval at the 34th CIML meeting in October 1999.

TC8 Instruments for Measuring Quantities of Fluids (Switzerland)

The Secretariat hosted an IWG meeting to take place on February 12, 1999, in Wabern, Switzerland. The following Recommendations were reviewed with the aim of revising them to include a test procedure and format of the test report: R4 Volumetric flasks (one mark) in glass; R29 Capacity serving measures; R40 Standard graduated pipettes for verification officers; R41 Standard burettes for verification officers; R43 Standard graduated glass flasks for verification officers; R45 Casks and barrels; and R96 Measuring container bottles. A resolution of the meeting was to combine R4, R29, R43, R45, and R96 into a new draft OIML Recommendation "Vessels for Public Use."

- TC8/SC3 Dynamic Volume Measurement (Liquids other than Water) (Germany)

The Secretariat distributed to the IWG a 1st CD revision of OIML R118 for comment by September 1999.

- TC8/SC4 Dynamic Mass Measurement (Liquids Other Than water) (U.S.A.)

OIML R105 "Direct Mass Flow Measuring Systems for Quantities of Liquid" is being considered for revision by the Secretariat.

- TC8/SC5 "Water Meters" (United Kingdom)

Meetings were held to discuss the revision of OIML R49 "Water Meters" at PTB in Germany in September 1998, at BIML in Paris in November 1998, in Israel in March 1999, and at the NWML in the U.K in June 1999. One of two different draft revisions of R49 "Water Meters Intended for the Metering of Cold Water" will be considered for approval by CIML at its 34th meeting in October 1999.

- TC8/SC6 "Measurement of Cryogenic Liquids" (U.S.A.)

The BIML distributed to CIML members for review and vote a completed draft Annex C "Test Report Format" prepared by the Secretariat for OIML R81 "Dynamic Measuring Devices and Systems for Cryogenic Liquids." That draft was approved by correspondence in April 1999.

- TC8/SC7 "Gas Metering" (Belgium)

The U.S. participated in an IWG meeting in Brussels in February 1999 to discuss a third working draft OIML R "Measurement of Quantities of Gas Distributed by Pipeline" (to include natural gas and compressed natural gas). The Secretariat plans to distribute a new draft to collaborating members for comment and schedule a meeting to discuss it in early 2000.

TC9 Instruments for Measuring Mass and Density (U.S.A.)

The draft revision of OIML R60 "Load Cells" prepared by the Secretariat and sent to BIML for distribution to CIML for comment and vote was approved by correspondence in March 1999. CIML will consider it for approval at the 32nd meeting in October 1999.

- TC9/SC2 Automatic Weighing Instruments (United Kingdom)

The U.S.A. responded with a yes vote and comments to the Secretariat on the third CD draft OIML Recommendation on "Automatic Road Weighbridges for Vehicles in Motion" in May 1999.

- TC9/SC3 Weights (U.S.A.)

OIML R33 "Conventional Value of the result of Weighing in Air" will be withdrawn and revised as an OIML Document. A task group with representatives from France, Germany, and the U.S.A. plan to meet in September 1999 to initiate this work.

OIML R47 "Standard Weights for Testing High Capacity Weighing Machines" and OIML R52 "Hexagonal Weights (Ordinary Accuracy Class from 100 g to 50 kg)" will both be withdrawn, and the appropriate text referencing each will be incorporated in the revision of OIML R111.

Board of Directors

OIML R111 "Weight Classes E, F, and M." As a result of decisions of the IWG at its meeting at NIST in May 1998, the Secretariat prepared a 1st CD revision of OIML R111 to include test procedures and a test report format. This draft revision was distributed by the Secretariat to collaborating member nations of TC9/SC3 for comment by June 1999. On the basis of the comments received, a second CD of R111 will be distributed to the IWG for TC9/SC3 for comment and vote by September 1999.

Fifth Asia Pacific Legal Metrology Forum (APLMF)

The APLMF met on October 26 - 27, 1998 in Seoul, Republic of Korea prior to the 33rd CIML meeting. Representatives of 16 of the 22 member economies attended. Mr. James Truex of Ohio was on the U.S. Delegation and also represented the NCWM. Peru conveyed regrets for not being able to attend. The following international and regional organizations were also present as observers: OIML, SALMEC, and WELMEC.

John Birch of Australia and Convenor of APLMF welcomed the participants and thanked the staff of the Korean National Institute for Technology and Quality (KNITQ) for hosting the meeting. He indicated that Columbia had applied for membership, and the application was endorsed by the members present.

Birch presented an oral report, which was also provided in written form, on the APLMF that included the following highlights: Since the establishment of the Forum in 1995, the technical programs have shown rapid expansion that was made possible by strong commitment of members. A Memorandum of Understanding (MOU) has been drafted among participating economies of the APLMF. It is expected to be completed before and signed at the next Forum meeting in the fall of 1999. The MOU will call for participants to pay fees to support the Secretariat. Australia will relinquish the responsibility of Convenor. The Convenor in the future shall be referred to as the President of the Forum and may or may not provide the Secretariat.

Summary reports of Working Group meetings held before the APLMF meeting are as follows:

Mutual recognition agreements

Dr. Chappell provided a report on the activities of the OIML Task Group on "Accreditation." (See the report to CIML and OIML TC3 on this subject.)

Goods packed by measure

John Barker of New Zealand, Chair of this Group, reported the following recommendations: (1) a survey should be conducted of member economies on prepackaged products with regard to standard sizes and loss of moisture content; (2) OIML should give priority for revising OIML R87 on "net content in prepackaged products" to include quality systems, statistical sampling, and accreditation and certification of packing facilities; and (3) consideration should be given to development of labeling requirements for prepackaged products with a quality mark which could be modeled on the current European E-mark system.

Intercomparison testing

John Birch, Chair of the Group, reported that the intercomparison of nonautomatic weighing instruments had been completed, and a report is being prepared. An intercomparison of load cells is now underway. A questionnaire will be distributed to members to determine their interest in participating in an intercomparison of standard masses and reference standard (master) meters for flow measurements.

Rice moisture measurement

Kerry Marston of Australia reported that (1) a suitable expert (a U.S. expert had been recommended but was unavailable for the specified time period) will be sought to conduct studies of such measurements in Thailand and Vietnam and that (2) specifications will be sought from manufacturers of the most commonly used instruments.

Utility meters

Rene Magnan of Canada reported that (1) a questionnaire would be finalized on the information on the performance requirements of heat meters and that (2) OIML would be requested to give priority to developing a Recommendation on electricity meters and for developing statistical sampling plans for verification as applied to all utility meters.

Training

Kerry Marston of Australia reported on the well-received training courses on "high capacity weighing instruments" and "nonautomatic weighing instruments" provided by APLMF in Shanghai, China in September 1998. (Six people from the U.S.A. participated in these courses.) Further recommendations were: (1) to develop a train the trainer course for vehicle petroleum and liquid petroleum gas; (2) to develop a regional directory of training and a network of training providers; and (3) to promote use of the training module on "nonautomatic weighing instruments" in cooperation with OIML.

During the APLMF meeting, a discussion the subject of the effects of "temperature compensation" on the sale of gasoline was discussed. The current practices in various countries were discussed by Dr. Ki Won Lee (Korea), Jim Truex (NCWM, U.S.A.), Alan Johnston (Canada), and John Birch (Australia).

The next meeting of the APLMF will be held in Bali, Indonesia, in September 1999. Mr. Aves Thompson of Alaska, Past Chair of the Board of Directors of the NCWM, will accompany Dr. Chappell to represent the United States.

Board of Directors

Appendix D (Continued)
OIML and APLMF Reports

November 25, 1998

Dr. Sam Chappell
Chief, Technical Standards Activities Program
NIST / Office of Standards Services
Bldg. 820 / Room 162
Gaithersburg, Maryland 20899-0001

Dear Sam:

Once again, it was my pleasure to represent the NCWM and be a part of the U.S.A. delegation at the recent APLMF and CIML Meetings. I enjoy working with you and your staff.

Enclosed is my report to NIST per the contract requirements. I believe the report includes the observations and recommendations you need from a NCWM perspective.

If you have any questions or need my report in a different format, please feel free to contact me at your earliest convenience.

Sincerely,

OHIO DEPARTMENT OF AGRICULTURE

James C. Truex
Assistant Chief
Division of Weights and Measures

Enclosure

Observations

Fifth APLMF Meeting

As one can see, after reviewing the report items, the APLMF had a very aggressive and full agenda with a wide range of issues. Australia, once again, put a lot of time, resources, and effort into the APLMF, especially Mr. John Birch who is the appointed APLMF Convenor.

Major issues discussed during the pre-package goods report included moisture loss due to dehydration (moisture loss), standard package sizes, drained weight, an "e mark" or "I mark" system, and unit pricing. Sound familiar?

It was reported that the initial report of intercomparison testing results for non-automatic scales should be out within 6 months. The report will first be sent to the participating laboratories for input reasons, then finalized for publication.

An intercomparison of master meters was proposed. Who does testing of meters to OIML standards in the U.S. NIST/Boulder? Nobody?

The APLMF Training Work Group is working on an OIML R76 examination procedure outline for use by a field inspector. OIML recommendations do not seem to take field testing concerns into consideration. It's as if there was an afterthought to put some subsequent verification statements in the recommendations. Training for developing and many developed countries is a very real concern. There is not a lot of quality training available in the field of legal metrology.

The scope of the Utility Meters Work Group includes water, gas, electric, heat, and telephone meters. There has not been a lot done by the work group to date. They are not sure how to deal with telephone meters (time). They are urging the CIML to continue work on a sampling plan for verification of utility meters.

There were some interesting discussions pertaining to temperature correction on petroleum at the retail level. Australia, Canada, and Korea have put together comprehensive reports from their perspective. With automatic temperature compensation of retail gasoline sales being practiced just north of our border, the NCWM must watch the situation and look at the pros and cons.

It was apparent to me that other countries welcome and want the NCWM to be involved in the APLMF. I got the impression that they truly respect our States, our NTEP labs, and the NCWM. I was once again reminded that our foreign colleagues do a better job of reading NCWM reports than most of us do in the United States. At this meeting, like other international meeting I have attended, I was asked dozens of questions about NCWM agenda items. Many delegates asked me questions pertaining to software, motor fuel quality, our privatization experiences, the U.S. State/local W&M system, NTEP, package labeling and other topics.

It was agreed that new work groups be formed on taximeters, metrological control of measurements in international trade of bulk commodities, and environmental measurements (air pollution).

In many cases APLMF projects are very similar to NCWM projects. For this reason alone, I think the NCWM should obtain and review APLMF reports, training materials, and other documents. Such an effort could result in a savings of time for the NCWM.

CIML Meeting

Questions pertaining to the evaluation of software were discussed. It appears the legal metrologists of the world are faced with the dilemma of where legal metrology responsibility ends in a system and the electronic massaging of data, information, and/or numbers takes over.

A lack of training resources. The need to produce training videos and training documents was discussed.

The second draft of the "Mutual Agreement on OIML Pattern Evaluations" was discussed in depth during both APLMF and CIML meeting sessions. Major discussion points included:

1. How to achieve mutual confidence?
2. Can non-issuing authorities participate?
3. Shouldn't it be referred to as a "multi-lateral agreement" instead of a "mutual recognition agreement" or "mutual recognition arrangement"?

Board of Directors

4. Should the use of subcontractors be allowed?
5. How can we assure that production meets type?
6. Can we be more specific about the requirements of the parties?
7. Are there liability questions?
8. Is it truly multi-lateral or bilateral if it allows voluntary acceptance of test data?
9. Will software be involved in the agreement?
10. Why don't we just use the WELMEC type approval agreement?
11. Accreditation should solely be based upon peer review.
12. It is important to adhere to the time schedule developed for this project.

Delegates suggested a seminar leading into a technical committee on software. Mr. Athane talked about the possibility of a technical seminar on software in June or September of 1999.

It was interesting to get some statistics pertaining to the OIML Certificate System. Many people in the United States think the OIML Certificate System is ancient compared to NTEP. Actually, the first OIML certificate was issued in 1992. There have only been 401 certificates issued, for eight device categories and 348 of the 401 are for scales and load cells. There are 14 certificates for gas pumps.

An interesting document surfaced during the CIML meeting. The document titled "Legal Metrology at the Dawn of the 21st Century" was authored by Mr. Knut Birkeland, a past President of the CIML. The document, appropriately nicknamed the Birkeland Report, is strikingly similar to the NCWM report of the Blue Sky Task Force. The report led to conversation about problems in developing countries, privatization, deregulation, the importance of the involvement of industry, international harmonization, standardization of laws and policies, accreditation of laboratories, accreditation of field certification programs, mutual confidence in other legal metrology programs, software evaluation by the type approval authority, and testing of software in the field. It was stated that, if legal metrology bodies do not pay attention to the world around them and react accordingly, someone may make decisions about their direction for them. All of these topics should sound familiar to NCWM members. Other legal metrology/weights and measures authorities are trying to deal with the same issues of concern.

Recommendations on NCWM Participation

As I stated in my report last year, my recommendations are the same or similar in many respects as those of Darrell Guensler, Barbara Bloch, and Charlie Gardner who preceded me in representing the NCWM at APLMF Meetings. I respectfully submit the following recommendations:

1. The NIST/Technical Standards Activities Program should take the lead roll in U.S. APLMF participation. The NCWM should assist NIST in this endeavor and continue active participation in the Forum. We are in a position to influence the standards development of the APLMF and perhaps OIML documents through the APLMF. We should communicate with WELMEC, but remember that WELMEC is a European regional group. The possibility of another regional group, for example a legal metrology forum for the Americas, must be considered. There has already been one training workshop for the countries of the Americas. I think there is talk about continuing those efforts. A major concern could be that there are no OIML certificate issuing authorities in the Americas, with the exception of the United States and, to the best of my knowledge, the United States has not issued its first OIML certificate.
2. The NCWM must determine the appropriate level of involvement in APLMF and resources available as part of the Strategic Planning Project. A process to select appropriate representatives should be developed. Representatives reporting responsibilities to the NCWM as a result of participation should be documented.
3. Continue to participate in the intercomparison on pattern approval testing in appropriate areas. This helps our labs understand OIML requirements, understand test procedures, and identify possible deficiencies. Further, it will contribute to other countries' confidence in our technicians' capabilities, laboratories, and overall W&M system. This could also be our fastest avenue to the issuance of OIML Certificates by NTEP, which will assist U.S. manufacturers in foreign markets.
4. Participate in appropriate training workshops such as the R76 train the trainer. The NCWM should consult with NIST to identify appropriate participants. For example, I think one NIST/OWM representative and one NTEP representative should attend training sessions deemed necessary. Those representatives should then be responsible for training other NTEP technicians as appropriate. NCWM/NTEP involvement will most likely be mandatory in nature as we become more involved with the OIML Certificate system and work to achieve mutual confidence with foreign laboratories. On other developing projects, NCWM S&T or L&R involvement may be considered fruitful.

5. In light of the fact that the NCWM was responsible for the most recent "Mutual Agreement on OIML Pattern Evaluations" project initiative, the NCWM should play a major role in its development. There have been many concerns expressed. NIST and NCWM members must pay close attention to discussions, proposals, and developments. The draft OIML document should be shared with U.S. manufacturers of scales and meters for comment. Will metering devices be included in the agreement? An OIML test capability profile for NTEP should be developed.

Appendix E

Report of the Metrology Subcommittee For the 1999 NCWM Annual Meeting

Subcommittee Membership:

Ronald Balaze, MI (MIDMAP), Chair
Ken Fraley, OK (SWAP), Vice Chair
L.F. Eason, NC (SEMAP)
Joe Rothleder, CA (WRAP)
Jose Torres, PR (CaMAP)
Dan Newcombe, ME (NEMAP)

BUDGET PROPOSALS

The Metrology Subcommittee interim report to the BOD included two funding requests in Appendix 1 to Metrology Subcommittee Report. The first requested travel expenses for an annual meeting with NIST management and representatives from Technology Services (OWM and the calibration program). The second requested funds for a subcommittee representative to attend the NCWM interim meeting. We have not been advised of the Board's decision on these requests and would like an update at the NCWM Conference.

STATE LABORATORY ACCREDITATION

The following seven States have applied for NIST-funded National Voluntary Laboratory Accreditation Program (NVLAP) accreditation:

Arizona
Connecticut
Indiana
Maine
Michigan
Ohio
Oklahoma

The Minnesota and Virginia labs are accredited at this time. The listed labs have submitted applications and Quality Manuals. They are waiting for the results of the Quality Manual reviews and the scheduling of on site audits. Several other States are working toward submitting applications this year. The subcommittee is asking the BOD to continue to voice their support for continued NIST funding of NVLAP accreditation.

NIST/OWM has been working with NVLAP to streamline the sharing of data and information related to the applications received from the States. OWM has been coordinating the review of quality manuals and will be providing the review along with any responses and manual changes to NVLAP to assist the quality documentation review. OWM is providing data on proficiency testing to NVLAP for review in lieu of additional proficiency tests and will be reviewing the parameters and ranges that laboratories apply for along with their uncertainty statements. OWM is making an effort to keep the cost of accreditation down by working as close as possible with NVLAP.

FUNDING REQUESTS

The interim report to the BOD reviewed the status of OWM funding for calibration of state standards. As of this time there have been no suggestions on how to have funding restored for this project.

H-105 WEIGHT CART AND CALIBRATION INTERVAL DRAFTS

The NIST solicitation for input and comments on the H-105 drafts on Weight Carts and Calibration intervals have been widely circulated and the comments from all concerned are being discussed at the NCWM Metrology Subcommittee Meeting. There are more than 60 pages of comments and suggestions to discuss. Based on initial analysis and recommendations, additional data will need to be collected. When the additional data is combined with the current data an extensive review will be conducted through a working group of interested parties coordinated by NIST. The presently available data has been submitted to Juana Williams for the S&T committee to work on "user requirements" for weight carts.

1999 STATE METROLOGY LABORATORY WORK LOAD SURVEY

The results of the 1999 Metrology Work Load Survey have been compiled by Ken Fraley (OK) and are being discussed Sunday, July 25, at the NCWM Metrology Subcommittee meeting. Approximately 45 States responded to the survey.

COMBINED RMAP MEETING

A combined RMAP meeting will be held in conjunction with the NIST Centennial year events. The meeting will be held at NIST from March 19 through March 23, 2001. OWM will take special advantage of the meeting at NIST to provide training directly from the technical staff in areas such as mass, volume, thermometry, hygrometry and statistics. OWM will work with representatives from each RMAP region to develop the training workshop to ensure it meets metrology training needs.

ROUND ROBINS

The 1-kg round robin for pivot labs and the environmental round robin are being circulated to gather data that will be used as preliminary information for the key comparisons. The Oklahoma, Arizona, California, Idaho, Maine, Connecticut, Michigan, Minnesota, North Carolina, Georgia and Puerto Rico laboratories will be involved in the key comparisons that are scheduled to start in January 2000.

The following Round Robins (listed by RMAP) are being planned or in progress around the country to determine proficiency, evaluate standards and assist in determining calibration intervals.

MIDMAP

20-lb and 10-lb Class F mass
Environmental measurements
1 kg for pivot lab (Minnesota and Michigan)
½ pint volume (gravimetric)
5-gallon test measure
2 – 1-kg precision mass

SWAP

Environmental measurements
1 kg for pivot lab (Oklahoma and Arizona)
200 g – 1-mg precision mass

SEMAP:

12-inch rule of special design to evaluate the accuracy of current length calibration procedures
5-gallon test measure
Environmental measurements
1 kg for pivot labs (North Carolina and Georgia)
100 mg – 1-mg precision mass
500-lb mass

NEMAP

Environmental measurements
1 kg for pivot labs (Maine and Connecticut)
10-kg, 5-kg, 100-mg, 1-mg precision mass
Small volume RR 1 pint, ½ pint

WRAP

Environmental measurements (Completed)
1 kg for pivot labs (California and Idaho)

Appendix F

NCWM BOD Item 101-14 – Protocol for Conduct of National Studies Updated following NCWM 7/99 Annual Meeting

1.0 PURPOSE and SCOPE

This protocol defines the formal structure for the conduct of national weights and measures product studies. This protocol will serve as the model for the identification, conduct, evaluation, and reporting of national product studies. Local Weights and Measures (W & M) officials asked to participate in a national product study should verify that the study will be conducted according to this protocol. A national product study is a geographically broad evaluation of two or more manufacturers' products within one or more product categories conducted by numerous states and local jurisdictions and designed to be representative of nationwide production. The scope of this protocol is intended to cover data gathering for informational purposes, such as product evaluation, in accordance with the practices and procedures of the National Conference on Weights and Measures, a non-profit weights and measures standards setting organization. This protocol supports the involvement and participation of industry as early as possible, when an issue is identified. The objective is to resolve issues at the lowest level, and as quickly as possible. Enforcement actions based on the individual inspections shall be left to the determination of the participating jurisdictions.

2.0 REFERENCES

National Conference on Weights and Measures (NCWM)
Executive Committee-1998 Pub 16, Agenda Item 101-15
Associate Membership Committee
NIST Handbook 44 (HB 44), Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices
NIST Handbook 130 (HB 130), Uniform Laws and Regulations in the Areas of Legal Metrology and Engine Fuel Quality
NIST Handbook 133 (HB 133), Checking the Net Contents of Packaged Goods
State, Local, and Federal regulations, as applicable

3.0 DEFINITIONS

Jurisdictional Resources: Any agency either at the local or state level which has the authority to exercise regulatory actions.

Local: State, county, townships or city under local jurisdiction.

NCWM: National Conference on Weights and Measures

NIST: National Institute of Standards and Technology

Regional Association: One of the four Regional Conferences (Northeastern, Southern, Central, Western) affiliated with the NCWM.

TEAM (NCWM Board of Directors Subteam): Comprised of NCWM Chairperson, NCWM Chairperson-elect and 3 other non-industry NCWM Board Members.

4.0 PROTOCOL

4.1 Roles and Responsibilities Relevant to National Studies

- 4.1.1 NCWM: Promotes uniformity and encourages compliance in weights and measures laws, standards and practices. Ensures Local has contacted the appropriate company representatives of the issue.
- 4.1.2 Local: Develop and maintain trained personnel to conduct testing, work with regional or adjacent jurisdictions to pursue appropriate procedures to bring about compliance.

- 4.1.3 NIST: Promote national uniformity in weights and measures standards, laws, and practices. Issue NIST references; act as technical resource.
- 4.1.4 TEAM: Evaluate and determine need for national studies, define study scope and develop protocol, specify who will analyze and report study results, decide when to share data with affected companies.
- 4.1.5 Study Originator: Weights and Measures jurisdiction, Federal agency or other appropriate organization requesting TEAM approval to conduct a national study.

4.2 National Product Study Identification, Conduct, Evaluation, and Reporting Process through NCWM

- 4.2.1 National Study Origination:
National product studies can be requested by a number of various parties including federal agencies, regional associations, local jurisdictions, the NCWM and industry. The request should be submitted to the NCWM chairperson. The TEAM is responsible for making decisions on whether a study is warranted, the scope of the study, developing and approving the study protocol, establishing appropriate study evaluation methodology, designating who will conduct study analysis, and reporting of study results.

National studies conducted for enforcement-related reasons should be considered when a diagnostic marketplace analysis is needed to confirm if a perceived marketplace problem exists that other enforcement options have not satisfactorily resolved. Federal regulatory agencies (FDA, FTC, DOA, etc.) and other federal agencies (NIST) can also recommend national studies to the TEAM. Requests for national studies should be assessed on a case-by-case basis to determine the need for the requested information.

- 4.2.2 The recommendation to proceed with the conduct of a national study must be approved by the majority of TEAM members. This group will assess if appropriate local, state, and regional actions have first been taken to attempt reaching resolution. Among the actions the TEAM will consider are:
 - ≠# Review inspection and test reports to ensure the jurisdiction conducted the tests in full accord with NIST Handbook 133 and applicable federal law.
 - ≠# Determine that an appropriately large enough sampling of product has been made to suggest a national study is worthwhile.
 - ≠# Determine if this is an industry or company problem
 - ≠# The local jurisdiction has contacted affected companies
 - ≠# Review related industry correspondence to determine compliance issue communication, awareness, and related responsive actions.
 - ≠# Confirm that the Local has made reasonable effort towards issue resolution.
- 4.2.3 Based on its findings and judgment, the TEAM can either: 1) decline to take further action, 2) recommend the local, State, or regional enforcement actions that still must be taken before reconsidering the request, or 3) recommend pursuing the national study process. To insure impartiality and to prevent possible conflicts of interest, no industry representative (whether on the NCWM Board of Directors, the Associate Membership Committee, etc.) should participate in the discussion/vote on whether the TEAM should pursue a national study.
- 4.2.4 Since the objective of the W&M jurisdictions is to achieve marketplace equity, the TEAM shall determine if direct formal notification of the affected company(ies) and industry is appropriate before undertaking a national study. Correspondence should be signed by the NCWM Chairperson and be directed to affected firm(s) and trade associations where appropriate. Copies should be sent to all non-industry members of the NCWM Board of Directors, the study originator, and the director of each local jurisdiction of the affected companies.

The TEAM can determine a time frame for good faith response and demonstrated action by the affected companies or industry which will determine if they satisfactorily address the issue. Based on the response, the TEAM can elect to take no further action, to postpone taking further action to

allow deployment and an effectiveness assessment of the trade action plan, or to proceed into conducting a national study.

The TEAM will work with the study originator to track industry resolution progress and can authorize a national study when appropriate without further notice. The TEAM can authorize a national study without issuing a letter when the degree of a presumed problem are judged to be significant and trade cooperation has been minimal.

- 4.2.5 TEAM shall be responsible for designing the study protocol insuring study scope and methods are appropriate for the purpose of the study. Among the parameters the TEAM shall define (where appropriate) in the protocol are:

- €# Purpose of the study
- €# Relevant Background
- €# Jurisdictions who will participate
- €# Products/product sizes to be tested
- €# Statistically sound design consistent with product characteristics
- €# Preferred sampling locations
- €# Time frame
- €# Test methodology
- €# Minimum lot and sample sizes
- €# Who will collect and analyze the data
- €# How data will be analyzed
- €# How errors will be handled
- €# How data will be reported

- 4.2.6 TEAM and the study originator shall approve the protocol for national studies and request concurrence of the federal agency(ies) having jurisdiction over the affected packaging plants. The person or organization analyzing the study should not be the study originator.

- 4.2.7 Study report content is recommended to include the analyses shown below. Circumstances relevant to each particular study may require modification to ensure results are accurate and non-misleading.

- €# Overall Number of Participating Jurisdictions
- €# Number of Jurisdictions from each region (NE, Central, South, West)
- €# Number of Inspections Conducted
- €# Number of Inspections Conducted in Accordance with Handbook 133
- €# Percent of Inspections Conducted in Accordance with Handbook 133
- €# Number of Products Represented in Conducted Inspections
- €# Number of Inspection Lots Passed Using Handbook 133 Procedures
- €# Percent of Inspection Lots Passed Using Handbook 133 Procedures
- €# Number of Inspection Lots Failed Using Handbook 133 Procedures
- €# Percent of Inspection Lots Failed Using Handbook 133 Procedures
- €# Number of Handbook133 Lot Failures Due to MAVs
- €# Percent of Handbook133 Lot Failures Due to MAVs
- €# Number of Handbook133 Lot Failures Due to Average Requirements
- €# Percent of Handbook133 Lot Failures Due to Average Requirements
- €# Number of Products Passed Using Handbook 133 Procedures
- €# Percent of Products Passed Using Handbook 133 Procedures
- €# Number of Products Failed Using Handbook 133 Procedures
- €# Percent of Products Failed Using Handbook 133 Procedures
- €# Average Amount Overpack/Underpack in Products Passed
- €# Average Amount Underpack in Products Failed
- €# Economic Value of Overpack/Underpack in Products Passed

- £# Economic Value of Underpack in Products Failed
- £# Supplemental analyses where relevant

- 4.2.8 The TEAM shall approve the final report and decide when to affirmatively share data and the final report with affected companies and industries involved in the study. The TEAM will also determine if and when the study report will be published.

Appendix G
NCWM Budget for Fiscal Year 2000

FY 2000 Budget

REVENUE

| | |
|-------------|---------------|
| <i>Dues</i> | \$ 133,845.00 |
|-------------|---------------|

NTEP Fees

| | |
|-------------------|---------------|
| NTEP Renewal Fees | \$ 134,500.00 |
|-------------------|---------------|

| | |
|-------------|-------------|
| NTEP Labels | \$ 1,000.00 |
|-------------|-------------|

| | |
|-------------------|----------------------|
| Total NTEP | \$ 135,500.00 |
|-------------------|----------------------|

Publications

| | |
|-------------|-------------|
| Handbook 44 | \$ 1,000.00 |
|-------------|-------------|

| | |
|--------------|-----------|
| Handbook 130 | \$ 500.00 |
|--------------|-----------|

| | |
|--------------|-------------|
| Handbook 133 | \$ 1,000.00 |
|--------------|-------------|

| | |
|--------|-------------|
| Pub 14 | \$ 1,000.00 |
|--------|-------------|

| | |
|--------------------|-------------|
| Consumer Brochures | \$ 2,500.00 |
|--------------------|-------------|

| | |
|-------|-----------|
| Pub 5 | \$ 500.00 |
|-------|-----------|

| | |
|-------------------|-----------|
| Freight collected | \$ 700.00 |
|-------------------|-----------|

| | |
|---------------------------|--------------------|
| Total Publications | \$ 7,200.00 |
|---------------------------|--------------------|

Conference & Meeting Revenue

Interim Meeting

| | |
|-------------------|--------------|
| Registration Fees | \$ 21,250.00 |
|-------------------|--------------|

| | |
|------------------------------|---------------------|
| Total Interim Meeting | \$ 21,250.00 |
|------------------------------|---------------------|

Annual Meeting

| | |
|--------------------------|--------------|
| Member Registration Fees | \$ 60,000.00 |
|--------------------------|--------------|

| | |
|-------------------------|-------------|
| Special Event only Fees | \$ 1,000.00 |
|-------------------------|-------------|

| | |
|----------------|-----------|
| Exhibitor Fees | \$ 300.00 |
|----------------|-----------|

| | |
|-----------------------------|---------------------|
| Total Annual Meeting | \$ 61,300.00 |
|-----------------------------|---------------------|

| | |
|---|---------------------|
| Total Conference & Meeting Revenue | \$ 82,550.00 |
|---|---------------------|

| | |
|----------|--------------|
| Interest | \$ 20,000.00 |
|----------|--------------|

| | |
|----------------------|------|
| Miscellaneous Income | \$ - |
|----------------------|------|

| | |
|----------------------|----------------------|
| TOTAL REVENUE | \$ 379,095.00 |
|----------------------|----------------------|

Cost of Sales

Membership Expense

| | |
|---------------------|--------------|
| Publication Postage | \$ 29,314.00 |
|---------------------|--------------|

| | |
|--------------|-----------|
| Certificates | \$ 250.00 |
|--------------|-----------|

| | |
|-----------------|-----------|
| Office Supplies | \$ 100.00 |
|-----------------|-----------|

| | |
|---------|-------------|
| Postage | \$ 2,000.00 |
|---------|-------------|

| | |
|--------------|-----------|
| Applications | \$ 250.00 |
|--------------|-----------|

| | |
|----------------------------------|-----------|
| Membership Renewal Broadcast Fax | \$ 750.00 |
|----------------------------------|-----------|

NCWM Budget

FY 2000 Budget

| | |
|-------------------------|---------------------|
| Duplicating | \$ 500.00 |
| Management Fee | \$ 7,000.00 |
| <u>Total Membership</u> | <u>\$ 40,164.00</u> |

NTEP

| | |
|----------------------------------|----------------------|
| Management Fee | \$ 15,000.00 |
| Postage | \$ 4,000.00 |
| General Travel | \$ 750.00 |
| Interim Meeting Travel Expense | \$ 7,500.00 |
| Belt Conveyor Sector Meeting | \$ 5,000.00 |
| Weighing Sector Meeting (Ottawa) | \$ 18,500.00 |
| OIML Meeting | \$ 10,000.00 |
| Measuring Sector Meeting | \$ 12,000.00 |
| NTEP Laboratory Travel (Ottawa) | \$ 15,000.00 |
| Internet Posting | \$ 12,500.00 |
| Insurance | \$ 3,500.00 |
| Duplicating | \$ 250.00 |
| <u>TOTAL NTEP</u> | <u>\$ 104,000.00</u> |

Publications

| | |
|---------------------------|---------------------|
| Management Fee | \$ 10,000.00 |
| Postage | \$ 5,000.00 |
| Publications Brochure | \$ 500.00 |
| Duplicating | \$ 50.00 |
| <u>TOTAL PUBLICATIONS</u> | <u>\$ 15,550.00</u> |

Conference & Meeting Expense

| | |
|------------------------|--------------|
| <u>Interim Meeting</u> | \$ 43,175.00 |
| <u>Annual Meeting</u> | \$ 54,950.00 |

| | |
|---|---------------------|
| <u>TOTAL Conference & Meeting Expense</u> | <u>\$ 98,125.00</u> |
|---|---------------------|

| | |
|----------------------------|----------------------|
| TOTAL COST OF SALES | \$ 257,839.00 |
|----------------------------|----------------------|

EXPENSES

Board of Directors

| | |
|---------------------------------|---------------------|
| Travel | \$ 20,000.00 |
| Chairman's Travel | \$ 7,500.00 |
| Chair-Elect Travel | \$ 7,500.00 |
| Duplicating | \$ 300.00 |
| <u>Total Board of Directors</u> | <u>\$ 35,300.00</u> |

NCWM Budget

FY 2000 Budget

| | |
|-------------------------------|---------------|
| <i>Standing Committees</i> | |
| A & P Committee Travel | \$ 1,000.00 |
| L & R Committee Travel | \$ 1,000.00 |
| S & T Committee Travel | \$ 1,000.00 |
| TOTAL Standing Committees | \$ 3,000.00 |
| General Travel: Unspecified | \$ 7,500.00 |
| <i>Legal & Accounting</i> | |
| Legal | \$ 2,500.00 |
| Annual Audit | \$ 4,000.00 |
| TOTAL Legal & Accounting | \$ 6,500.00 |
| Office Supplies | \$ 1,500.00 |
| Postage | \$ 3,000.00 |
| Duplicating | \$ 100.00 |
| Printing | \$ 2,000.00 |
| Telephone | \$ 1,500.00 |
| Bank Service Fees | \$ 100.00 |
| Charge Card Discount Fees | \$ 2,000.00 |
| Insurance | \$ 1,500.00 |
| Associate Member Fund | \$ 13,335.00 |
| Administrative Mgmt Fee | \$ 41,000.00 |
| TOTAL EXPENSES | \$ 118,335.00 |
| SUMMARY | |
| Total Revenue | \$ 379,095.00 |
| Total Cost of Sales | \$ 257,839.00 |
| Total Expenses | \$ 118,335.00 |
| Operating Profit | \$ 2,921.00 |

Report of the Laws and Regulations Committee

Karl H. Angell Jr.
Director
West Virginia Weights and Measures

Reference
Key Number

200 Introduction

This is the Report of the Laws and Regulations Committee (Committee) for the 84th Annual Meeting of the National Conference on Weights and Measures (NCWM.) It is based on the Interim Report offered in the Conference "Program and Committee Reports" (NCWM Publication 16), testimony at public hearings, comments received from the Regional Weights and Measures Associations and other parties, the Addendum Sheets issued at the Annual Meeting, and actions taken by the membership at the Voting Session of the Annual Meeting. The informational items presented below were adopted as presented when the Committee's report was approved.

Table A identifies agenda items by Reference Key Number, title, and page number. The first three digits of the Reference Key Numbers of the items are assigned from the subject series listed below. Voting items are indicated with a "V" after the item number. Consent calendar items are marked with a "VC." Items marked with an "I" after the item number are for information. Items marked "W" have been withdrawn from consideration. Items marked with a "D" after the key number are developing issues. The developing designation indicates an item has merit; however, the item is returned back to the submitter for further development before any action at the national level. Table B lists the appendices to the report, and Table C provides a summary of the results of the voting on the Committee's items and the report in entirety. This report contains recommendations to amend National Institute of Standards and Technology (NIST) Handbook 130, 1999 edition, "Uniform Laws and Regulations," or NIST Handbook 133, "Checking the Net Contents of Packaged Goods," Third Edition and Supplements 1 (1990), 2 (1991), 3 (1992), and 4 (1994). Revisions proposed by the Committee are shown in **bold face print** by ~~crossing out~~ information to be deleted and underlining information to be added. New items proposed for the handbooks are designated as such and shown in **bold face print**. Proposals presented for information are shown in *italic* type unless identified as informational. The section mark, "§," is used in most references in the text and is followed by the section number and title, (for example, § 1.2. Weight.) When used in this report, the term "weight" means "mass."

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| Engine Fuels, Petroleum Products, and Automotive Lubricants Inspection Law (EFL) | 223 Series |
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| Table B Voting Results | | | | | |
|--|--------------------------------|------|--------------------|------|---------|
| Reference Key Number | House of State Representatives | | House of Delegates | | Results |
| | Yeas | Nays | Yeas | Nays | |
| 231-3 | 40 | 3 | 69 | 2 | Passed |
| 231-5 | 40 | 2 | 57 | 12 | Passed |
| 232-2 | 23 | 17 | 28 | 43 | Failed |
| 232-4 | 43 | 0 | 69 | 1 | Passed |
| 237-1 | 41 | 1 | 59 | 0 | Passed |
| 250-3 | 42 | 0 | 70 | 0 | Passed |
| 200 Committee Report in its Entirety by Voice Vote | All Yeas | None | All Yeas | None | Passed |

**Details of All Items
(In Order by Reference Key Number)**

210 NIST Handbook 130 - General

210-1 W Ensuring the PLR is Identical to Federal Regulations

Source: NCWM Laws and Regulations Committee

Background: At the 1998 NCWM Annual Meeting, it was reported that the L&R Committee Chairman had written a letter to the Food and Drug Administration (FDA) requesting that it issue final regulations to implement the 1992 metric amendments to the Federal Fair Packaging and Labeling Act. FDA has not indicated when it will issue final regulations.

Interim Meeting Action: The Committee withdrew this item until FDA publishes a final rule.

221 Weights and Measures Law

221-1 D Retail Price Posting

Status: This item is under development in the Central Weights and Measures Association. For further information, contact Don Onwiler, Nebraska Department of Agriculture/Division of Weights and Measures, telephone: 402-471-4292, or at donlo@agr.state.ne.us on the Internet via email. The Committee will accept comments on this issue at the Interim Meeting in 2000.

Source: The Central Weights and Measures Association (CWMA)

The Uniform Weights and Measures Law (WML) does not require retailers to display the selling price of products for consumers to use in value comparison. As a result, jurisdictions do not have a standard to guide them if they choose to amend their laws to require price information for consumers. When price posting is not required, consumers find making value comparisons difficult. The CWMA would like to see a standard to guide jurisdictions that want to adopt retail price posting laws. CWMA submitted the following proposal.

Proposal: amend the WML to include a price-posting requirement:

Section XX. Price Posting

Whenever a commodity is being sold for a non-negotiable price, the price shall be clearly and conspicuously posted or displayed by the retailer prior to the sale of the commodity. If a commodity is being sold at a discounted price, ~~the exact amount of the discount, or the discounted price~~ shall be clearly and conspicuously posted or displayed by the retailer prior to the sale of the commodity.

The Committee withdrew this issue as a result of comments received from the Food Marketing Institute (FMI). The FMI is concerned that the proposed wording could be interpreted to require retailers to post the regular price, the monetary value of the discount, and the sale price on all discounted items. If this is the intent of the requirement, according to FMI, retailers will have a costly burden and consumers will have limited benefits. The Committee believes the intent of the proposal is to have retailers post only the price at which an item is offered for sale. If this is correct, the requirement could be met with either a shelf tag, sign, or by individually priced items.

The Committee requested that the CWMA work with representatives of the retail industry to develop this item. The Committee suggested that a CWMA informal work group be formed to further develop the proposal and recommend good pricing practices for specific price accuracy issues related to percent off items (e.g., 70 percent off all items on a shelf or rack in a department store). The Committee also requested that the work group develop recommendations about how retailers can provide more precise information on package labels and signs regarding discounts offered to frequent shopper club card holders.

Regional Action: The Southern Weights and Measures Association (SWMA) supports further developing of this item. To ensure that the proposal receives comments from as many interested parties as possible, the SWMA recommends that trade associations and interest groups be informed about the issue being developed. The SWMA is concerned about the impact the proposal will have on the many businesses that post a “non-negotiable” price. The SWMA recommends that the group should define the term “non-negotiable.” Experience indicates that the “non-negotiable” price may, in fact, be negotiable depending on the number of items purchased, the motivations of the seller, or other reasons.

221-2 I Electronic Price Labels

Source: Southern Weights and Measures Association

Background: Karl Angell, Chairman of the NCWM L&R Committee, received the following correspondence from Mr. Nigel Mills of the Hobart Corporation.

"Hobart now offers an 'Electronic Shelf Labeling System'. As this new product enters the market, we are encountering variations in requirements from state to state. We are requesting that a Uniform Regulation for Electronic Price Labels be developed as a standard for electronic price labeling at the retail shelf. We would like to request that you raise this issue at the Southern Regional meeting of the NCWM in October so that the proposal may begin receiving due process toward completion of a regulation.

Electronic Shelf Tags provide a near certain way to assure accurate pricing and 1:1 correlation between the displayed price and that stored in a retail store's central computer files. As a manufacturer, we are facing the prospect of having to design and tool shelf tags unique to each jurisdiction. This will be an expensive process for us and will reflect ultimately on the price and, consequently, acceptance of this technology. We feel confident that a Model Regulation will facilitate the acceptance of electronic price labeling and will lead to a more rapid implementation to the benefit of the consumer.

Currently, states are attempting to apply their paper tag requirements. We are seeing variations in requirements including but not limited to: use of background colors, use of 'bold' type for 'Unit Price', special locations for unit and total price information and differing minimum character size requirements. All in addition to the stipulations of the Unit Pricing Regulation in Handbook 130."

Interim Meeting Action: The Committee will work with OWM to form a work group of officials and industry representatives to develop an informational paper on this issue.

231 Packaging and Labeling Regulation

231-1 I Fair Packaging and Labeling Act

Source: NCWM

Background: In 1997, the NCWM and U.S. Industry learned that the European Union (EU) announced its intention to enforce metric-only labeling requirements beginning January 1, 2000. This EU directive (80/181/EEC) specifically forbids optional use of English units on all products. Since that announcement, American and European businesses have petitioned the EU for a delay in the effective date because they believe the metric-only requirement will result in increased expenses for businesses operating in the global marketplace since the U.S. Fair Packaging and Labeling Act (FPLA) prohibits metric-only labeling. Prior to the 1998 Annual Meeting, the NCWM learned that the EU has proposed an amendment to the Directive to extend the implementation date for a metric-only labeling requirement to 2010. In considering the extension, the EU stated that it recognizes that this issue will arise again in the year 2010 if the FPLA is not amended to permit a metric-only labeling.

At the 1998 Annual Meeting, the NCWM adopted a resolution to support the EU's proposal to delay implementing the metric-only requirement. This will allow Congress time to amend the FPLA to permit metric-only labeling as an option for packers. The NCWM also decided to take the lead on this by "... initiating a nationwide effort by concerned industry, government agencies, and consumers to petition the U.S. Congress to amend FPLA to **permit** metric-only labeling as an option." According to the resolution, this enables American firms that also do business in the EU and other metric only markets to use a *global* package labeled in a manner to be compliant in all markets.

Interim Meeting Action: The Committee will request that the Secretary of Commerce submit a proposal to Congress recommending that the Fair Packaging and Labeling Act be amended to permit packagers the option of using metric-only labeling. The Committee believes that by adding this option to the FPLA, the market place will decide when metric-only labeling is appropriate.

231-2 W FPLA - Exemptions for Retailers and Distributors

Source: Western Weights and Measures Association (WWMA)

Background: Some jurisdictions believe that Section 1452(b) of the Fair Packaging and Labeling Act (FPLA) (see below) exempts wholesale or retail distributors from responsibility for labeling accuracy unless they are directly involved in labeling the package. According to the WWMA report, deleting this section will allow State and local officials to hold accountable retailers and wholesalers who sell illegally labeled merchandise accountable.

This excerpt from FPLA is provided for discussion purposes:

§1452. Unfair and Deceptive Packaging and Labeling: Scope of Prohibition.

(a) Nonconforming Labels. - *It shall be unlawful for any person engaged in the packaging or labeling of any consumer commodity (as defined in this chapter) for distribution in commerce, or for any person (other than a common carrier for hire, a contract carrier for hire, or a freight forwarder for hire) engaged in the distribution in commerce of any packaged or labeled consumer commodity, to distribute or to cause to be distributed in commerce any such commodity if such commodity is contained in a package, or if there is affixed to that commodity a label, which does not conform to the provisions of this chapter and of regulations promulgated under the authority of this chapter.*

(b) Exemptions. - *The prohibition contained in subsection (a) of this section shall not apply to persons engaged in business as wholesale or retail distributors of consumer commodities except to the extent that such persons (1) are engaged in the packaging or labeling of such commodities, or (2) prescribe or specify by any means the manner in which such commodities are packaged or labeled.*

Recommendation: The WWMA requested that the NCWM petition Congress to amend FPLA to delete Section 1452(b).

231-3 V Selling Random Weight Packages by Each

(This Item Was Adopted)

Source: Southern and Western Weights and Measures Associations

Background: The Committee was contacted for guidance on the appropriate method of sale for random weight turkeys after a retailer contacted several States requesting approval to sell random weight turkeys for a “fixed-price.” The Committee understands that States were asked if they would permit sales of random weight turkeys on the basis of a “fixed-price” for turkeys within a specific weight range (e.g., \$5 for all turkeys between 8 and 14 pounds.) Stores would not advertise or post a price-per-pound for turkeys if they use this marketing plan. The Committee is also aware that several “options” to this method of sale are proposed (e.g. turkeys with random weights, a fixed total price on the label with price per pound ranges posted on signage, and a third option of placing a standard weight and fixed price on each unit.) Thus, if consumers wanted to make value comparisons, they would have to compute a price per pound using several different formulas. The Committee understands that the justification for requesting a change in the method of sale was to save labor costs through not having to weigh and label each individual turkey.

Traditionally, random weight turkeys have been sold on the basis of weight and price-per-pound. The Committee is not aware that consumers are demanding a change in the current practice. The Committee became concerned about this practice because a retailer told States that did not permit “fixed-price” sales that other jurisdictions allowed the practice. The difference in policies concerned the retailer and officials alike, so the Committee provided information on “fixed price” sales to all jurisdictions. The following table illustrates the “fixed-price” approach the store proposed to use (the prices and weight ranges are for illustrative purposes only). The turkeys will be separated in three different freezer bins, and a sign with the pricing information will be posted nearby. The packer would mark individual weights on each turkey. This weight is typically handwritten in indelible ink in terms of either pounds and ounces or decimal pounds.

| Frozen Turkeys | |
|----------------|-------|
| Weight Ranges | Price |
| 12 lb to 16 lb | \$5 |
| 16.01 to 20 lb | \$7 |
| 20.01 to 24 lb | \$9 |

The Committee is concerned about this issue and other recent attempts to change historic methods of sale for meat, poultry, and other products. For example, retailers in some jurisdictions are selling chicken nuggets, shrimp, oranges, apples, and baking potatoes (not all potatoes) by count. Although many produce products are sold by count, potatoes and many other items have historically been sold by weight. The Committee has not recommended changing methods of sale because the only justification it received is that the change increases sales of some products over others. The Committee is not opposed to changing a method of sale to meet retail needs in marketing products to ensure fair competition (i.e., ready-to-eat foods) as long as legal requirements are met. However, the Committee is reluctant to support changes that are not driven by uniform standards and appear to compromise value comparison.

The Committee believes that “fixed-price” sales of random weight packages frustrates value comparison. This is because consumers would not have the unit price available to help them in their purchasing decision although this information has historically been provided. As the following table illustrates, if retailers used the “fixed price” method of sale, consumers would pay a different price-per-pound for each turkey. The table shows only six different unit prices but, in reality, every turkey in every bin could have a different price-per-pound ranging somewhere between 31¢ and 45¢.

| Frozen Turkeys | | Lowest Wt Unit Price/lb | Highest Wt Unit Price/lb |
|-------------------|-------|----------------------------|-----------------------------|
| Weight Ranges | Price | | |
| 12 lb to 16 lb | \$5 | 42¢ | 31¢ |
| 16.01 lb to 20 lb | \$7 | 44¢ | 35¢ |
| 20.01 to 24 lb | \$9 | 45¢ | 38¢ |

Another concern is that value comparison between stores would be thwarted if one store advertised fixed-prices for turkeys and other stores advertised theirs on a price-per-pound basis.

Unit Pricing Information on Random Packages

After contacting a number of States, the Committee found that one reason some jurisdictions permit this method of sale is because their law does not include a provision like Section 20 in the Uniform Weights and Measures Law (UWML) which requires random weight packages to bear a unit price:

Section 20. Declarations of Unit Price on Random Weight Packages. - In addition to the declarations required by .19 of this Act, any package being one of a lot containing random weights of the same commodity, at the time it is offered or exposed for sale at retail, must bear on the outside of the package a plain and conspicuous declaration of the price per kilogram or pound and the total selling price of the package.

The Committee recommends that jurisdictions without this requirement in their law should adopt Section 20. If the requirement cannot be included into law, the jurisdictions should consider adopting it as a regulation under a jurisdiction's administrative procedures act.

Exemptions for Random Weight Packages

Several jurisdictions indicated that they would prohibit fixed-price sales under the provisions of Section 11.1 Random Packages in the Exemptions section of the Uniform Packaging and Labeling Regulation (UPLR). This section exempts random weight packages from the requirements for type size, location, and free area requirements. It also exempts random weight packages from bearing metric units. However, turkeys and other meat and poultry products are exempt from metric units because USDA labeling regulations do not mandate them.

11.1. Random Packages. -- A random package bearing a label conspicuously declaring:

- (a) the net weight,
- (b) unit price, and
- (c) the total price

shall be exempt from the SI units, type size, location, and free area requirements of this regulation. In the case of a random package packed at one place for subsequent sale at another, neither the price per unit of weight nor the total selling price need appear on the package, *provided* the package label includes both such prices at the time it is offered or exposed for sale at retail.

Under this regulation, any retailer who uses the fixed-price method of sale would have to ensure that each frozen turkey bears a net weight declaration that meets the requirements of Section 8.2.1. Minimum Type Size Requirements, Section 8.1.1. Location, and Section 8.1.4 Free Area under the prominence and placement requirements for consumer packages UPLR. Because of the shape of the turkeys, it is difficult or impossible to use automatic labeling equipment to label them. Usually, packers mark the net weights on the turkeys with indelible ink. These handwritten weights may not

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meet the □prominent, definite, plain, and conspicuous□ requirements of Section 8.1 General that requires writing be equally as clear as printing. Several jurisdictions also indicate that the weight is sometimes obscured because turkeys are often placed in mesh carrying bags that cover the declaration. The Committee would like to point out that turkeys could be sold as □fixed-price□ if they were labeled with uniform weights like other standard packed items according to labeling regulations. However, the variations in turkey weights are quite large, so classifying turkeys into a reasonable number of □standard□ weights would be difficult.

Summary and Other Recommendations

The most effective means for States to prevent the spread of □fixed-price□ sales of random weight packages is for all jurisdictions to adopt a provision similar to Section 20 in the UWML. This requires all random weight packages to display a unit price. One reason for this recommendation is that retailers may consider selling other random weight packages by □fixed-price□. Current printer technology may allow stores to print random weight labels that meet the type size, location, and free area requirements of the regulation and thus allow them to discontinue unit pricing on meat and poultry products.

Committee Recommendation: Add a new requirement to Section 6. Declaration of Quantity: Consumer Packages in the UPLR to require random weight packages to include the net weight, unit price, and total price.

6.16. Random Packages. -- A random weight package must bear a label conspicuously declaring:

(a) the net weight,

(b) unit price, and

(c) the total price

In the case of a random package packed at one place for subsequent sale at another, neither the price per unit of weight nor the total selling price need appear on the package, *provided* the package label includes both such prices at the time it is offered or exposed for sale at retail.

231-4 W Use of Commas and Decimal Points in Net Quantity Declarations

Source: Laws and Regulations Committee

Background: The Federal Trade Commission (FTC) contacted the Committee for clarification about when to use commas and decimal points in net quantity declarations. FTC reported that some countries require that a comma be used instead of a point in decimal quantity indications (e.g., 1,87 instead of 1.87) on packaged goods. The same countries may require that the decimal point be used instead of a comma on declarations of one thousand or more (e.g., 1.000 instead of 1,000.) This issue is related to a cultural difference and not to the use of the metric system. The issue primarily affects exported goods, so it may impact U.S. firms that use a single label for domestic and export markets.

Action: Mexican and Canadian officials told the Committee that they will accept the use of either commas or decimals in net quantity declarations on imported products. The Committee believes that the U.S. should also accept the use of either commas or decimals in net quantity declarations if other countries permit the practice. The Committee believes this is necessary to accommodate global trade by reducing technical trade barriers. However, the Committee believes the U.S. should prefer the use of the point in decimal declarations over the comma because it is the customary practice in the U.S. and other countries. The Committee is carrying this issue forward as an informational item to develop a consensus position on this issue with the Federal agencies that are responsible for packaging and labeling. The Committee will solicit the assistance of Samuel Chappell, U.S. Representative to the Organization of International Legal Metrology (OIML), in requesting that OIML encourage all countries to adopt similar policies on this issue.

231-5 V Allow Packagers the Option of Labeling in Only Metric Units

(This Item Was Adopted)

Source: Laws and Regulations Committee

Background: At the 1998 Annual Meeting, the NCWM adopted a resolution to support the European Union's (EU) proposal to delay implementing metric-only labeling requirement. The NCWM supported the extension in order to allow Congress time to amend FPLA to permit metric-only labeling as an option for packers.

At the Interim Meeting, the Committee decided that the NCWM should take the lead by giving packers the option of using metric-only labeling by amending the Uniform Packaging and Labeling Regulation to permit metric-only labeling on products not subject to the Fair Packaging and Labeling Act.

The Committee believes that the market place is the best judge of when metric-only labeling is appropriate. Because non-consumer packages can already be labeled in metric-only units under the UPLR, the Committee recommends that the UPLR be amended to also **permit** metric-only labeling as an option for consumer packages. This will allow American firms that do business in Canada, Mexico, the EU, and other markets to use a *global* package labeled such to be compliant in all markets.

The amendment that the Committee recommends will exempt packages with appropriate metric units from the requirement for inch-pound units. The result will be that packagers can either label packages with only metric units or metric and inch-pound units which maintains the current requirement. This exemption will not apply to foods, drugs, or cosmetics under FDA's control or to products subject to the regulations of the Federal Trade Commission (See Section 2.6.8. "Commodities Under Federal Trade Commission Jurisdiction. . ." in the Interpretations and Guidelines Section of NIST Handbook 130 for additional information.)

To demonstrate the significant impact that this action will have, the Committee prepared a partial list of the commodities not subject to the FPLA which is presented below. The proposed amendment will allow the packagers of these products the option of labeling them in terms of metric-only units.

Automotive motor oil and antifreeze, automotive accessories (e.g., floor mats, seat covers, spare parts, etc.) and chemical products (e.g., polish, wax, and finish conditioner, rubbing compound, tire paint, fuel additives, etc.), bottled gas (e.g., for cooking or heating), brushes (e.g., bristle, nylon, etc.), brooms and mops (e.g., glass, floor, and dish mops, etc.), candle holders (without candles), china & crystalware, fertilizer and fertilizer materials, plants or shrubs, garden and lawn supplies, fountain pens, mechanical pencils, and kindred products (ball point pens, lead pencils, and lead refills, etc.), garden tools (hose, trowels, grass clippers, etc.), gift tape and ties (ribbon, tape, etc.) and wrapping material (e.g., decorative wrapping foil, paper, cellophane, etc.), glasses and glassware (and, disposable plastic glasses), hand tools, handicraft and sewing thread, hardware (e.g., extension cords, thumb-tacks, hose clamps, nails, screws, picture hangers, etc.), household furnishings (e.g., including feather and down-filled products, synthetic-filled bed pillows, mattress pads and patchwork quilts, comforters, and decorative curtains); magnetic recording tape (e.g., reels, cassettes, and cartridges), paints and kindred products (e.g., wallpaper, turpentine, putty, paint removers, caulking and glazing compounds, wood fillers), pet care supplies, photo albums, pictures, metal and plastic buckets and garbage cans, plastic tablecloths, place mats and plastic shelf linings, sewing thread and accessories (e.g., needles of any type, thimbles, kindred articles, etc.), shoelaces, stationery, ink and writing supplies (e.g., loose leaf binders, paper tablets, etc.); textiles (e.g., cloth laundry bags, towels, cheese cloth, shoe shine cloths, etc.), typewriter ribbon, and wire products.

Committee Recommendation: The Committee recommends that the following exemption be added to the Uniform Packaging and Labeling Act so that manufacturers of consumer packages have the option of using metric-only labeling. Nothing in the proposed amendment applies to unit pricing, advertising, recipe programs, nutrition labeling, or other general pricing information. Nothing in the amendments shall be construed to require changes in package size or to affect in any way the size of packages. The Committee believes that by adding this option to the UPLR, it will allow packagers and the market place to determine when metric-only labeling is appropriate.

11.33. Inch-Pound Units, Exemptions - Consumer Commodities. -- The requirements for statements of quantity in inch-pound units shall not apply to packages that bear appropriate SI units. This exemption does not apply to foods, drugs, or cosmetics or to packages subject to regulation by the Federal Trade Commission, meat and poultry products subject to the Federal Meat or Poultry Products Inspection Acts, and tobacco or tobacco products.

232 Method of Sale of Commodities Regulation

232-1 W Frozen and Canned Clams

Discussion: This proposal requested that the NCWM petition the Food and Drug Administration (FDA) to develop a standard of identity for whole and chopped frozen clams and canned chopped clams in liquid. A standard of identity would limit the amount of free liquid by weight in packages of clams, thereby facilitating value comparison and aiding enforcement efforts. Historically, the FDA has said that clams packed in water should be labeled by drained weight. These commodities are now sold by net weight that includes the solids and free liquid in the package. The free liquid may be water or clam juice or a mixture of both. The amount of free liquid in both of these product types varies among brands, and the actual amount of solids is not declared on package labels. California officials found that the amount of free liquid in frozen chopped clams varies from as little as 10 percent to as much as 65 percent by weight.

The Committee carried this issue forward as an informational item for further study. This action was based on comments received at the Interim Meeting from the Food Marketing Institute, several clam packing companies, and the National Fisheries Institute (NFI). The Committee requests additional test data and other information so that it can develop a proposed standard of identity and the necessary background material required in submitting a petition to FDA. Petitions to FDA must include the following information: action requested--what rule, order, or other administrative action does the petitioner want FDA to issue, amend, or revoke? Statement of grounds--the factual and legal grounds for the petition, including all supporting material, as well as information known to the petitioner that may be unfavorable to the petitioner's position. Petitions must also include a statement that the petition includes all relevant or irrelevant information. In addition, FDA may require petitions to include information on the economic and environmental impact. This item was withdrawn because the Committee did not receive any comments that indicated there was any national interest in this issue.

232-2 V Construction and Industrial Plywood

(This Item Was Not Adopted)

Source: Laws and Regulations Committee

Discussion: The Committee received a request from the U.S. Department of Commerce-sponsored Committee for Voluntary Product Standard (VPS) PS 1-95 to amend NIST Handbook 133 to recognize the accuracy provisions and tolerances of the VPS for plywood. A jurisdiction responding to a consumer complaint about the thickness of plywood sheeting conducted a survey in several retail outlets and found that the labeled claims of several manufacturers were incorrect. The jurisdiction notified the manufacturers of the survey results and advised them of the weights and measures legal requirements. In response to this notification, the manufacturers advised the jurisdiction that they manufacture plywood sheeting to meet NIST Voluntary Product Standard (VPS) PS 1-95 "Construction and Industrial Plywood." This standard includes requirements for dimensions and tolerances, moisture content, and grade marking. The manufacturers involved have been advised that plywood sheeting must be accurately labeled and that thickness measurements must meet the lot average and individual unit requirements of NIST Handbook 133. The manufacturers were also notified that the thickness and dimension tolerances specified in the VPS are not consistent with the maximum allowable variations specified in NIST Handbook 133 and that a VPS does not pre-empt State or local requirements. At the 1998 Interim Meeting, representatives of the plywood and hardwood industries presented information on their industry's current measurement and labeling practices. The Industry representatives requested that the Committee defer action on this item until the various lumber industry trade associations have time to develop a consensus proposal for the NCWM to consider. The Committee agreed to withdraw this issue and provide technical assistance to the industry as they develop a proposal.

Following the 1998 Interim Meeting, the American Plywood Association (APA) requested that the L&R Committee consider the proposed addition to Handbook 130. According to the APA, their proposal would recognize the methods of

sale that have been accepted in the market place since the 1940s. The proposal is based on the NIST Voluntary Product Standards that have been developed in a consensus process with input from producers, users, and general interest parties. The proposal is modeled after the precedent established for lumber and calls for full disclosure. To that end, the APA is prepared to provide information to the retail trade to assist them in ensuring that the consumer is fully informed. Wood structural panels are a commodity, which have been successfully traded since the 1930s. Actual dimensions have rarely been an issue of commerce. The structural performance of the product and adequate performance under building law have always been the primary focus of the industry. Dimensional tolerances specified in the Product Standards are not consistent with NIST Handbook 133, yet they have served commerce well as evidenced by the rare instance of dimensional dispute. According to the APA, the primary issues that arise between buyer and seller relate to the quality of the glue bond, grade, workmanship, and occasionally other performance characteristics rather than dimensions.

Regional Action: The SWMA recognizes that NIST Handbook 130, Method of Sale Regulation has provisions for the sale of softwood and hardwood lumber based on nominal dimensions. Therefore, the SWMA recommended that the NCWM L&R Committee work with the APA and the Engineered Wood Association to develop language that is consistent with the existing methods of sale for softwood and hardwood lumber to address the dimensional requirements for structural wood panels. The Western Weights and Measures Association does not support the APA proposal and submitted an alternative proposal to amend the Maximum Allowable Variations for manufactured wood panel (see Item 250-5). The Northeastern Weights and Measures Association recommended that the Committee expand this issue to include an investigation of the marking and labeling practices of the entire manufactured wood industry. NEWMA also suggested that the best alternative was to permit the use of nominal sizes but also require full disclosure of actual dimensions.

Committee Recommendation: Officials and industry representatives provided the Committee with a great deal of input on this issue. All parties involved agreed that the best approach would be to permit the use of nominal sizes but also require full disclosure of actual dimensions. The Committee believes that consumers will be fully informed if both the nominal and actual dimensions are clearly displayed at the point of sale or wherever nominal sizes are displayed to consumers in retail stores (i.e. on shelf labels adjacent to the product where it is displayed or on the wood products themselves.) At the Interim Meeting, wood industry representatives agreed to provide information to the retail trade to assist them in the labeling of these products. The Committee recommends adopting a new Section 2.29, "Wood and Cellulose Based Panels" that is presented below.

2.29. Wood and Cellulose Based Panels

Applies to wood or cellulose-based panels used for construction, industrial and do-it-yourself projects. Such panels include, but are not limited to:

- a. **Plywood**
- b. **Oriented Strand Board (OSB) and waferboard**
- c. **Hardboard**
- d. **Particleboard**
- e. **Medium Density Fiberboard (MDF)**
- f. **Cellulosic Fiberboard**
- g. **Wood Fiber Cement**

2.29.1 Quantity

Representations shall be in terms of the length, width, and thickness. The use of nominal or specified dimensions may be used if the actual dimensions are prominently displayed at the point of sale to the customer and the term nominal ("nom") or specified is also used in conjunction with any representation of nominal or specified dimensions.

Action at the Annual Meeting: This item was returned to the Committee for further study.

232-3 W Ready-Mix Dry Wall Joint Compounds

Source: Western and Southern Weights and Measures Association

The Uniform Packaging and Labeling Regulation in Section 6.4 states that the declaration of the quantity of a particular commodity shall be expressed in terms of weight if the commodity is solid, semi-solid, viscous, or a mixture of solid and liquid. Ready-mix joint compound is a viscous liquid. Drywall Finishing Council Inc. (Council) submitted a proposal to amend the Method of Sale Regulation by adding a new section 2.29 on ready-mixed joint compounds. The new section would establish volume as the method of sale rather than weight.

At the 1999 Interim Meeting, the Committee learned that although "conventional" weight and "light" weight ready-mix compounds perform the same function, they are distinctly different products. It also determined that the drywall industry has an extended history of selling "conventional" ready-mix compounds by weight and "light" weight ready-mixed compounds by volume. The Committee withdrew this item because it did not believe a problem exists with the manner in which the ready-mix compounds have historically been labeled.

The Committee was concerned about the method the industry uses to differentiate a "conventional" from a "light-weight" ready-mix compound. The Council informed the Committee that its members had reviewed their practices and had agreed that products weighing 5.44 kg per 4 liters (12 pounds per gallon) or more would be considered "conventional-weight" products. Those products weighing less than that amount would be classified as "light-weight" products. The Council indicated that its members would label all "light-weight" compounds with the term "Light" or "Light Weight" to ensure that consumers can easily recognize the different products.

Recommendation: Add a specific method of sale for ready-mix dry wall compounds by adopting Section 2.29. Dry Wall Compound.

2.29. Ready -Mix Dry Wall Joint Compound

2.29.1. Definition.

2.29.1.1. Ready-Mix Dry Wall Joint Compound. -- includes all ready to be used compounds for spackling, patching, and concealing joints and fastener heads in dry wall finishing and repair.

2.29.2. Quantity. -- All ready-mix dry wall compounds must be sold, offered, or exposed for sale in terms of volume measure: in SI units in terms of the liter; and in inch-pound units in terms of fluid ounces, or quarts, or gallons.

Interim Meeting Action: The Committee withdrew this item because it believes that no action is necessary to permit the use of the traditional method of sale for these products. Ready-mix dry wall compound is manufactured and sold as two distinctly different products. Traditional ready-mix compound is sold by weight. Since its 1981 inception, "Light" ready-mix product has been sold by volume. The Committee understands that the members of the Dry Wall Finishing Council have agreed that products weighing 5.44 kg per 4 liters (12 pounds per gallon) or more will be classified as "conventional-weight" products. Those weighing less than that amount will be classified as "light-weight" products. The Council indicated that its members would label all "light-weight" compounds with the term "Lite" or "Light Weight" to ensure that consumers can easily recognize the different products. The Committee supports the established trade custom method of sale for "light" product (as defined above) and recognizes that it will continue to be volume and that the method of sale for conventional weight products will be weight.

232-4 V Section 2.11. Carpet

(This Item Was Adopted)

Source: The Southern and Western Weights and Measures Associations

Background: According to the Carpet and Rug Institute (CRI), carpet retailers advertise their products based on the price per square foot. Section 2.11 of the Method of Sale of Commodities Regulation states that carpet shall be priced per square yard. The CRI says that consumers are more comfortable dealing with room sizes based on square feet, and other floor coverings are advertised and sold in units of square feet. The CRI believes that the change will reflect consumers' desires and put carpet on a comparable basis with other floor coverings.

Committee Recommendation: Change Section 2.11 (e) to read as follows:

- (e) **The price per square meter if sold in SI units, or the price per square yard foot if sold in inch-pound units, and the total price.**

In addition to changing the method of sale to the price per square foot as stated above, the Committee changed the title of Section 2.11 to ☐Carpet☐ to replace ☐Carpeting☐.

232-5 D Sand, Rock, Gravel, Stone, Paving Stone, and Other Materials

Status: The Western Weights and Measures Association is developing this item. For further information, contact John Moore, Arizona Weights and Measures Department, Telephone: 602-255-5211, or by Fax on 602-255-1950. The Committee accepted comments on this issue at the Annual Meeting.

Source: The Western Weights and Measures Association (WWMA)

Background: According to the WWMA these commodities are sold by cubic measure, weight, or area which compromises value comparison.

Goal: To develop a method of sale for each commodity to ensure consumers can compare values.

236 Uniform Regulation for National Type Evaluation

236-1 I Ensuring that the NTEP Regulation is Consistent with NTEP Policies

Source: Northeast Weights and Measures Association (NEWMA)

Background: Recent changes have been made to Publication 14 to institute classes of certificates: active, inactive, and withdrawn, but these changes have not been added to the Uniform Regulation for NTEP. The NEWMA requested that the Committee determine if changes should be made to harmonize the provisions of Publication 14 and the NTEP regulation.

Prior to adopting NTEP maintenance fees, Certificates of Conformance (CC) did not expire. Under the maintenance fee system, manufacturers can only sell new devices that have an active CC or those manufactured before the CC expired. The regulation does not prohibit a manufacturer from producing and selling devices with an inactive CC. The NEWMA believes that definitions are needed for the class of certificate, and language is needed to clarify the meaning "traceable to a CC." The NEWMA believes the current Section 3 is vague and that if a company is prohibited from selling a new device under an inactive or withdrawn certificate, States may be challenged.

Committee Recommendation: The Committee conducted a review of the regulation and identified several areas where it needs to be modified to reflect recent NTEP changes in Publication 14. The proposed changes are presented in Appendix A and include new references to Active and Inactive Certificates and the elimination of Section 6 Unlawful Acts because these provisions are addressed in State laws relating to NTEP. The Committee recommends adopting the amendments to the NTEP that are presented in Appendix A.

Action at the Annual Meeting: The Committee is carrying this item over pending further action by the NTEP Board of Governors.

237 Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation

237-1 V Premium Diesel Fuel

(This Item Was Adopted)

Source: Southern Weights and Measures Association

Background: At the 1998 NCWM Annual Meeting, an amendment to the Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation that established requirements for Premium Diesel was adopted. It was noted by the SWMA that Section 7 Test Methods and Reproducibility Limits, 7.1.1.e. Fuel Injector Cleanliness, did not specify which procedural edition of the Cummins L-10 Injector Depositing Test should be followed for compliance testing: The Cummins L-10 test is undergoing procedural changes as it is being prepared for ASTM standardization. It was recommended that the regulation be amended to clarify that the most recent draft edition of the test method be specified when performing compliance testing.

Committee Recommendation: The Committee concurred with the recommendation of the SWMA and felt the proposed amendment met the intent of the regulation. The committee also felt that language should be inserted into the regulation that confirmed the NCWM's intent to update the regulation with ASTM designations once assigned by ASTM. The committee recommended adoption of the following amendments to the Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation.

Section 7. Test Methods and Reproducibility Limits

7.1.1. Premium Diesel – The following test methods shall be used to determine compliance with the applicable premium diesel parameters:

- (a) Energy Content – ASTM D 240
- (b) Cetane Number – ASTM D 613
- (c) Low Temperature Operability – ASTM D 4539 or ASTM D 2500 (according to marketing claim)
- (d) *Thermal Stability – Octel America F21-61 (180 minutes, 150°C)
- (e) *Fuel Injector Cleanliness – The most recent edition of the Cummins L-10 Injector Depositing Test as endorsed by the ASTM L-10 Injector Depositing Test Surveillance Panel.

*** Upon ASTM approval of standard test methods that are derived from the above referenced methods, the ASTM standard test methods shall be used to determine compliance with the applicable premium diesel parameter.**

Committee Recommendation: Adopt the revisions to Premium Diesel Fuel presented above.

237-2 I Compliance Procedures for the Premium Diesel Fuel Regulation

Source: Petroleum Subcommittee

Background: In response to the 1998 NCWM adoption of premium diesel regulations, the SWMA requested the Committee to develop guidelines on regulatory procedures to assist States in ensuring compliance with the rule. The Premium Diesel Work Group developed an initial draft document based on the request. The draft document was presented to the Laws and Regulations Committee at the 1999 Interim Meeting. After reviewing the document, the Committee agreed with the recommendation and requested the premium diesel work group to continue with developing the document into a final version. In an effort to solicit comments from NCWM membership on the desired content of the guideline material, the document is presented in Appendix E as an informational item.

237-3 I Petroleum Subcommittee Agenda Items

Source: Petroleum Subcommittee

The Subcommittee has submitted several proposed projects for its 1999-2000 work plan. The Committee will develop an agenda for the Subcommittee based on the comments received on the following projects at the Annual Meeting.

- **Update the Engine Fuels, Petroleum Products, and Lubricants Laboratory Guideline** – This guideline is contained in the Interpretations and Guidelines Section of NIST Handbook 130 and was last updated in 1994. Since then, the cost of equipment has changed, and new test methods have been developed. The Subcommittee proposes to revise and update the guideline.
- **Federal Kerosene Dye Information** – It was suggested that information on the new Internal Revenue Service (IRS) kerosene dye policies be prepared and distributed to the States. The Subcommittee proposes to develop and distribute this information.
- **Automotive Lubricants** – The Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation, implies that the document covers lubricants. When the regulation was developed, the Subcommittee gave developing engine fuel requirements priority, with the understanding that in the future they would address lubricants. The uniform law gives broad authority to regulate lubricants; however, the regulation had no requirements. The Subcommittee has proposed developing requirements for lubricants for the Committee to consider.

238 Interpretations and Guidelines

238-1 W Guideline for Labeling Meat and Poultry Broths

Source: Office of Weights and Measures

Background: A State requested assistance to resolve a problem with the appropriate method of sale for beef and chicken broth when the State found that one packer declared the net content on packages by net weight while products from other firms labeled in terms of fluid volume. The United States Department of Agriculture determined that because a majority of broth products are now labeled by net weight, this method of sale is essentially the established trade custom for broth. If officials find broth labeled by volume, they should notify the packers that the customary method of sale for broth is net weight and require the packers to modify their labeling accordingly.

Recommendation: OWM recommends that the NCWM add a section to the interpretations and guidelines in NIST Handbook 130 indicating that net weight is the established trade custom for labeling the net quantity of contents beef and chicken broth.

Interim Meeting Action: The Committee withdrew this item because it believes that no action is necessary to permit the use of a traditional method of sale.

250 NIST Handbook 133

250-1 W Moisture Loss for Meat and Poultry Products

Background: The Committee received a request from the Food Safety and Inspection Service (FSIS) of the United States Department of Agriculture (USDA) to develop additional gray areas for the following products.

1. Ice-packed bulk poultry.
2. Raw meat products (chopped beef, ground beef, hamburger, and beef patties.)
3. Cured pork products (hams, shoulders, and loins.)
4. Cured beef products (corned beef, corned beef brisket, and tongues.)
5. Ham patties, chopped ham, pressed ham, and similar products.
6. Dry salami and other meat or poultry products that lose moisture to the atmosphere.

U.S. District Court Ruling Invalidates “Water-Added” Rules for Poultry

On July 23, 1997, a U.S. District Court ruled as “arbitrary and capricious” the USDA's added water regulations that allow poultry to pick up as much as 8 percent water. This ruling will require USDA to issue new regulations that will reduce the water retention disparity between meat and poultry. The current rules have been in effect since the 1960s. A Federal Judge said the Secretary of Agriculture could not adequately justify allowing poultry products (but not meat) to retain

process water. However, the court rejected arguments that the moisture pick-up rules permitted economic adulteration. This decision will require USDA to collect reliable data and establish new standards on water absorption. On September 11, 1998, the USDA published a proposed rule that will prohibit meat and poultry processors from adding water to their products unless it is necessary to meet food safety requirements. A declaration of the weight of any extra water would have to appear on package labels according to the proposal. According to USDA, the proposed rule is an example of regulatory reform that will provide consumers with more information to help them decide on purchases. The USDA says that plants would have to provide data to show that water remaining in their products is the result of processes used to meet food safety requirements. These processes include rinsing to reduce Salmonella bacteria. Companies could make a labeling claim if their products do not retain water during processing. FSIS proposes the rule as part of an overall regulatory review announced in 1995 and in response to the Federal District Court ruling last July that ruled that previous levels for water in poultry were not based on scientific data. The proposal is comprehensive and may affect the test procedures in NIST Handbook 133 for USDA meat and poultry products. The closing date for comments was December 10, 1998. The proposal is in the September 11, 1998, edition of the Federal Register, Volume 63, No. 176, page 48961. The proposal is located on the Internet at: <http://www.fsis.usda.gov/OA/fr/fr98-24309.htm>

Interim Meeting Action: The Committee withdrew this issue pending publication of final regulations on moisture pick-up in meat and poultry products by USDA.

250-2 W Bark Mulch Test Procedure

Source: This item was carried over for further study at the 1999 Interim Meeting

Discussion: A mulch manufacturer and a State jurisdiction tested a variety of mulch products to determine if the current design of test measures results in excessive product compaction. The Committee's Technical Advisor has copies of a report on the tests. The primary concern listed in the report is that using specified test measures, typically 56.6 L (2 cubic feet) or 84.9 L (3 cubic feet), results in excessive product compaction during tests. The reported range of compaction found on a variety of products was from 4.2 to 11.1 percent. The Report suggests one solution to reduce compaction is to use a test measure with 28.3 L (1 cubic foot) compartments or build test measures that lay on their sides. North Carolina experimented with a horizontal test measure that consists of a single container divided into three one cubic foot compartments. The compartment dividers and one end of the box are removable so that the mulch can be easily poured from the container. North Carolina reported that compaction was reduced with the horizontal box. They also reported that the severity of compaction in the vertical test measure was generally less than that found in the study that Ohio conducted.

Action: At the 1998 Interim Meeting, mulch manufacturers and the National Bark and Soil Producers Association (NBSPA) made several presentations regarding the test procedure for mulch. The Committee heard conflicting information about the amount of compression that occurs with different types of mulch and about the effects on accuracy that different styles of test measures have. After much deliberation, the Committee decided against recommending any change in the test measure specifications. The Committee reviewed the NCWM's 1989 position (see Item 240-2 4.12 Mulch Test Procedure on page 122 of the Report of the 74th NCWM) when a similar recommendation to convert to a 28.3 L (1 cubic foot) box was considered. At that time, the NCWM rejected the proposal because the test data indicated that the cost of the additional inspection time outweighed the benefits obtained through the change. At the 1998 Interim Meeting, the NBSPA opposed the proposed change because it violated the principle that the test measure replicate the package established in NIST Handbook 133 when the section was first adopted. The NBSPA also said the changes complicate the test procedure and increased set-up and inspection time (e.g., more leveling, more reading interpretation, more pouring/sifting more repetition.) Another concern was that a change in the test measure requirements would require States and industry to construct new measures and retrain personnel. The Committee agreed with the NBSPA that it is the Maximum Allowable Variation (MAV) requirement that forces manufacturers to over-pack to avoid producing any bag that exceeds the 5 percent limit. The Committee believes that adoption of the new MAVs for mulch by the NCWM at its 1998 Annual Meeting should resolve the concern with the MAV requirement.

Committee Comments on NIST Handbook 133 - Section 4.12. Mulch Test Procedure

The Committee received many comments on the test procedure and standards used for testing. Some of the comments related to test measure dynamics, mulch compaction and layering, box design criteria, and readability of the test results.

Test Measures

For several reasons, the design of the test measure affects the accuracy and repeatability of test results. Some of the factors include the effects of compaction, friction, readability, and the dynamics of the measure itself. For example, one factor is that the amount of the mulch's surface area that is in contact with the box will change test results due to friction and the different settling and flowability characteristics of the products. Another factor is the readability of the test measure. It is generally agreed that the closest reading that can be taken on most mulch test boxes is 1.2 cm (one-half inch). The Committee recommends that all jurisdictions use the measure dimensions specified in the handbook and that the level gage be graduated in 1.2 cm (one-half inch) increments. If the measure has a clear front, the level gage should be placed at the back of the measure so that the inspector reads the indications over the top of the mulch. Another concern is ensuring that the mulch is level. The Committee recommends that inspectors be trained to exercise care in leveling the surface of the mulch prior to reading and that the reading be taken from a position that minimizes errors caused by parallax. The Committee also recommends that when lines are etched or marked in boxes, the lines be extended to all four sides of the measures except for those with clear fronts where lines could be included on only three sides. The Committee believes this will improve accuracy in reading the mulch level. The Committee also recommends that a line indicating the MAV level also be marked to reduce the possibility of reading errors when the level of the mulch is at or near the MAV. The Committee also learned that situations exist where inspectors round indications up or down when the level of the mulch is not level with a marked line. To increase uniformity in testing when these situations occur, the Committee recommends that inspectors round the value up to the higher increment. This will ensure that reading errors always benefit the packer and will reduce some of the concern over the readability of the measures.

Hand Sifting of Mulch

The Committee would also like to clarify the circumstances when mulch should be sifted by hand to minimize the effects of layering which reduces volume. In 4.12.2. Procedure, the following note appears:

***Note:** Some types of mulch are susceptible to clumping and compaction. Steps should be taken to ensure that the material is loose and free flowing when poured into the test measure. Gently rolling the bag before opening may reduce the compaction of material; using your hands to sift the material as it pours into the measure may also reduce clumping.*

The Committee recommends that to reduce compaction, all bags should be "gently" rolled and shaken before opening. The Committee stresses that hand sifting should be used only when the mulch does not pour freely from the bag or it falls out in clumps (e.g., when moisture content is high and the product sticks together.) Sifting by hand can cause some products to fall into the measure and compress more than if they are simply poured from the bag.

Regional Action: At the Central Weights and Measures Association (CWMA) interim meeting, the State of Ohio stated that the Committee's report is incomplete based on an understanding that the Committee reached during last year's deliberations. According to the CWMA report, the national Committee had agreed to look further at test procedures at the 1998 Interim Meeting. The CWMA recommended that the Committee make a specific request for the data needed for development of new test procedures.

At the Northeastern Weights and Measures Association (NEWMA) interim meeting, officials expressed the view that the MAV change adopted by the NCWM in July 1998, should take care of much of the concerns over the current test procedure. The NEWMA encouraged jurisdictions to continue to test product to assure that packers meet the current standard. The NEWMA also recommended that jurisdictions that have the resources should continue to study the test method to determine if further changes are necessary.

At the Southern Weights and Measures Association (SWMA) annual meeting, the members voted to maintain the existing test procedure and design requirements for the vertical volumetric measure. The SWMA acknowledges that some jurisdictions advocate the use of a horizontal testing apparatus as opposed to the traditional vertical test measure. SWMA stated that many mulch bagging companies expressed a desire to stay with the vertical measure. The SWMA recognizes that the vertical test measure results in some compaction of the mulch but points out that compaction also occurs with the horizontal test measure. Another concern the SWMA considered was that it takes longer to fill a horizontal measure because there is a greater chance that product will be spilled. The SWMA endorsed the current test procedure and vertical test measure design because the industry needs a uniform standard that is accepted by all jurisdictions. The vertical measure has been used by industry and weights and measures officials for many years, and the SWMA believes it should remain the standard for determining the net contents of bagged bark mulch. SWMA says this position is justified because the vertical test measure is easier to use; it is universally accepted and used by a majority of the mulch industry; and weights and measures officials have considerable experience using it.

Interim Meeting Action: The Committee withdrew this item because it believes that the MAV change adopted by the NCWM in July 1998 should address many of the concerns over the current test procedure.

250-3 V Test Procedures and Labeling Requirements for Sponge and Chamois

(This Item Was Adopted)

Source: Southern Weights and Measures Association

Background: A firm which processes and sells chamois leather and natural sea sponges submitted information that indicates many of these products do not bear accurate size declarations and the area declared on some chamois products may be misrepresented. The information was collected from retail store surveys conducted in several States. The firm requested that weights and measures officials inspect these products and enforce existing labeling requirements so that consumers can compare values. One concern is the need for a recognized test procedure for chamois. Most chamois are irregular in size and shape making area determinations difficult. Handbook 133 has no procedure to determine the area of leather products. A procedure published in 1977 by the Sponge and Chamois Institute is available for use until the NCWM can adopt its own standard. The industry test procedure is based on the measurement standards contained in a Federal Specification (KK-C-300b) that the Department of Defense has used for more than 50 years to measure leather products. The Specification includes two procedures to determine area. One is a gravimetric procedure, and the other involves the use of a template made of graph paper to determine the area. The Committee worked with the Sponge and Chamois Institute and the FTC to develop guidelines for industry on the appropriate labeling requirements for these products (See Appendices B and D) and test procedures for use in verifying area declarations (See Appendix C for the Chamois Test Procedure).

Committee Recommendation: The Committee recommends that the NCWM approve the labeling guidelines presented in Appendices B and D. These guidelines will be made available for distribution to packagers and retailers to assist them in appropriately labeling products. The Committee also recommends adopting the chamois test procedure presented in Appendix C and the sponge test procedure presented in Appendix D. If adopted these procedures will be added to the 4th Edition of NIST Handbook 133.

250-4 I Maximum Allowable Variations (MAVs) for Count Declarations on Seed

Source: Central Weights and Measures Association

Background: This issue relates to the value of the Maximum Allowable Variation (MAV) permitted for count declarations on packages of agricultural seed such as corn and soybeans. According to the seed industry, farmers prefer to purchase seed by count because it is used in calculating acres per bag of seed and in calibrating seeding machines. The Committee worked with members of the seed industry, trade associations, and other interested parties to develop a proposal for NCWM to consider. The American Seed Trade Association (ASTA) established a work group, comprised of industry and university representatives, to study this issue and prepare recommendations for consideration at the 1998 Interim Meeting. The ASTA work focused on standardizing the procedures used to insure the accuracy of electronic seed counters and developing uniform operational procedures for their use. The work group studied other issues such as the need to determine the impact of moisture loss on the accuracy of seed count and the need for a simplified test method to determine count.

Prior to the Interim Meeting, the Committee received a letter from the Association of Official Seed Analysts (AOSA) about its study on seed count accuracy. The AOSA is an organization of regulatory agencies and/or seed laboratories from the U.S. and Canada whose mission is to promote uniform laws, regulations, and laboratory test methods. The letter described their proposed test method for count of soybeans which requires that the variation between test results be limited to 2 percent. The test method also includes procedures for sample selection and equipment calibration. The American Association of Seed Control Officials (AASCO), and the States of Maryland and Michigan submitted letters supporting the AOSA proposal. At the Interim Meeting, ASTA and Iowa State University presented the results of their studies and explained the difficulties encountered in verifying seed counts. They also described how moisture loss impacts the accuracy of net weight and count declarations. The ASTA proposed that the NCWM adopt an MAV of 6 percent for seed count and requested that one or more packages be allowed to exceed the MAV.

Discussion: Due to the disparity between the recommended allowances determined by the two studies (Iowa State and AOSA), the Committee made this issue an information item. It recommended further review of the study methodologies and test results submitted by the interested parties. The Committee also encouraged the ASTA and AOSA to resolve the differences in their recommendations and resubmit a mutually agreeable proposal for future consideration. Study disparities aside, the Committee believes that the appropriate method of sale of packaged seed is by net weight and, if desirable, a seed count declaration should be included as supplemental information. If the seed industry selected this method of providing count information as a supplemental declaration, it would still be useful and easily accessible to farmers. This approach reduces the need for weights and measures officials to devote resources to verify the declaration which the seed control officials could control as part of their other regulatory duties. The Committee believes this is one way to resolve this issue, because seed control officials have test equipment and can often verify count declarations as part of the seed certification process conducted in a laboratory.

At the 1998 NCWM Annual Meeting, a representative of the ASTA reported that its members had met with officials from the American Association of Seed Control Officials (AASCO) to develop a joint proposal regarding that appropriate MAV for count. The Committee learned that both organizations agreed to support a proposal for a 4 percent MAV on declared count for soybean and corn at the 1999 Interim Meeting. ASTA also urged the NCWM to adopt the AOSA sampling procedures for seed, and indicated that they want to work with the Committee to develop a gray area for different seed similar to those the NCWM has adopted for dry pet food and flour.

Regional Action: At the Central Weights and Measures Association Interim Meeting, a jurisdiction stated that for some seeds, the primary declaration should be count. Farmers use count to determine how many acres can be planted. Weight is not a consideration in the price of the seed. It was pointed out that if count is used as the primary declaration, test procedures in HB 133 should be reviewed. Under current test procedures, a package containing 80,000 seeds would require a manual count of 8,000 seeds by the inspector.

Interim Meeting Action: The Committee carried this item over pending final action by the Association of Official Seed Analysts (AOSA) Seed Count Committee on a recommendation for test procedures and an MAV for corn and soybeans.

250-5 W Maximum Allowable Variations (MAVs) for Manufactured Wood Panels

Source: Western Weights and Measures Association (WWMA)

Background: According to the report submitted by the WWMA, manufacturers of wood panels have been "downsizing" their products without changing the labeled or advertised dimensions. The American Plywood Association (APA) has submitted a proposal to add a section for "Wood Structural Panels" to the Method of Sale of Commodities Regulation in NIST Handbook 130 (see Item 232-2). The proposed section would permit nominal dimensions and tolerances for wood structural panels identical to those contained in "Voluntary Product Standard PS 1-95 Construction and Industrial Plywood." The WWMA believes the APA proposal, if adopted, would result in misrepresentation of the product to the consumer.

In its report, the WWMA said wood panel manufacturers recently attempted to introduce the concept of "nominal" sizes to the market place. The report said that the wood industry claims that the use of "nominal" sizes began more than 50 years ago, and its use is necessary to maintain compatibility in the construction of buildings. To support these claims, other standards using "nominal sizes" were cited. The report goes on to say that, until a few years ago, full thickness wood panels were readily available and have been steadily replaced by undersized product. The WWMA report says it is easy to understand the rationale behind this practice because a full-sized panel contains a specific volume of a product. Reducing any of its dimensions will result in consumers receiving less volume.

According to an example given in the WWMA report, the industry's proposal will result reducing in thickness of about 793 μm (1/32 inch). For a 1.22 m (4 foot) x 2.44 m (8 foot) x 12.7 mm (½ inch) panel, this represents 6.25 percent reduction in the product and, therefore, cost. By labeling the reduced panel with a "nominal" size, the panel can be advertised and sold competitively over producers of the full-size panel. This translates into more profit for the manufacturer. The WWMA believes that allowing manufacturers to advertise or sell wood structural panels using "nominal" sizes violates NIST Handbook 130 Uniform Weights and Measures Law Section 15 and similar laws used by most weights and measures jurisdictions.

Recommendation: The WWMA recommends that the following Maximum Allowable Variations (MAVs) for manufactured wood panels be included in NIST Handbook 133. These MAVs are equivalent to the dimensional

tolerances proposed by the American Plywood Association. The WWMA also recommends adoption of a method of sale for manufactured wood panels which is also presented below.

1.0. Maximum Allowable Variation for Manufactured Wood Panels

For length and width, the maximum allowable variation (MAV) shall be 1.6mm (1/16 inch). For a labeled thickness up to 19 mm (3/4 inch), the MAV shall be 0.4 mm (1/64 inch) and for a labeled thickness greater than 19 mm (1/64 inch), the MAV shall be 3.0 percent.

The following labeling requirements for manufactured wood panels should be added to the Method of Sale of Commodities Regulation in NIST Handbook 130.

2.0. Manufactured Wood Panels

2.1. Application.-- This section applies to manufactured wood-based panels including softwood plywood, wafer board, oriented strand board (OSB), composite panels used for construction, industrial and do-it-yourself projects.

2.2. Method of Sale. -- Manufactured Wood Panels must be advertised and labeled in terms of length, width, and thickness. Retail consumer products shall include quantity statements in both SI and Inch-Pound Units.

Interim Meeting Action: This item was withdrawn because the Committee believes the existing MAVs for length and width in NIST Handbook 133 are sufficient for these products and that the proposed method of sale in item 232-2 will provide adequate information to insure that consumers are fully informed.

250-6 I Adoption of the 4th Edition of NIST Handbook 133

Source: Laws and Regulations Committee

Background: A 4th Edition of NIST Handbook 133 has been developed and circulated for review and comment among the NCWM membership. The 4th Edition is based on the 4th Supplement to the Third Edition of the Handbook that the NCWM adopted in 1994. The sampling plans, tare procedures, statistical requirements, Maximum Allowable Variations, and other requirements contained in the 4th Edition are identical to those in the 4th Supplement.

The Handbook's major change is format. The new handbook uses a question and answer format to explain the requirements and guide the inspector through the testing process. The Handbook uses plain language for clarity. Another major change is that the size of the handbook has been reduced by eliminating obsolete or redundant information.

At this time, the Committee recommends one amendment to the handbook to harmonize and simplify the test procedure for count by amending Table 5-1. Sampling Plans for Packages by Low Count (50 or Less) and Table 5-2. Sampling Plans for Packages Given Tolerances (e.g., Glass and Stemware) by changing the sample and lot sizes to match the sample and lot sizes in Table 2-1. Sampling Plans for Category A.

The Committee believes the 4th Edition of the handbook will be easier to understand and use because it eliminates confusion. To receive a draft copy of the 4th Edition, contact Tom Coleman, 301-975-4868 or e-mail him at t.coleman@nist.gov

Action At Annual Meeting: The Committee will carry this item over as an informational item and will prioritize its work over the next year to focus on the adoption of 4th Edition of NIST Handbook 133 according to the following timetable.

Timetable for Adoption of the 4th Edition of NIST Handbook 133

July 1999: The Committee holds a public hearing at the Annual Meeting to take comments on the 2nd draft. Committee and OWM staff prepares a 3rd draft of the handbook for review by the Committee.

On or before December 1, 1999 - 3rd draft of the 4th Edition will be distributed.

January 2000: The Committee will hold a public hearing at the Interim Meeting to take comments on the 3rd draft. Committee and OWM staff will prepare a 4th draft of handbook for review by the Committee.

On or before May 1, 2000 - 4th draft of the 4th Edition will be distributed.

July 2000: The Committee will hold a public hearing at the Annual Meeting to take comments on the 4th draft. Addendum sheets will reflect final changes and adoption of the handbook is put up for a vote. If NCWM adopts the handbook, OWM staff will prepare a final draft of the handbook for Committee review.

On or before November 1, 2000 - 4th Edition will be published and distributed.

K. Angell, Jr., West Virginia, Chairman

R. Andersen, New York

S. Morrison, San Luis Obispo County, California

D. Onwiler, Nebraska

R. Williams, Tennessee

Associate Membership Committee Representative: C. Guay, Procter & Gamble Company

NIST Handbook 133 Working Group: B. Bloch, California, Chairman

Petroleum Subcommittee: Randy Jennings, Tennessee, Chairman

Canadian Technical Advisor: J. Watters and S. Dupras

NIST Technical Advisor: T. Coleman

NIST Technical Advisor on the Uniform Regulation for National Type Evaluation: T. Butcher

Committee on Laws and Regulations

Appendix A.

Uniform Regulation for National Type Evaluation

Section 1. Application

This regulation shall apply to ^[Note 1. see page 126] any type of device and/or equipment covered in National Institute of Standards and Technology Handbook 44 for which evaluation procedures have been published in National Conference on Weights and Measures, Publication 14, "National Type Evaluation Program, Administrative Procedures, Technical Policy, Checklists, and Test Procedures."

NOTE 1: This section can be amended to include a list of devices, or device types to which NTEP evaluation criteria does not apply. Additionally, a State can amend this section to allow it to conduct a type evaluation and issue a 'Certificate of Approval.' This approach should be limited to occasions where formal NTEP Type Evaluation criteria does not apply, and to new technologies or device applications where the development of criteria is deemed necessary by the director.

Section 2. Definitions

2.1. Active Certificate of Conformance. - A document issued by the National Institute of Standards and Technology based on testing by a Participating Laboratory, which the certificate owner maintains in active status under the National Type Evaluation Program (NTEP). said The document constitutes evidence of conformance of a type with the requirements of this document and the NIST Handbooks 44, 105-1, 105-2, or 105-3. By maintaining the Certificate in active status, the Certificate owner declares the intent to continue to manufacture or remanufacture the device consistent with the type and in conformance with the applicable requirements. For manufacturers of grain moisture meters, maintenance of active status also involves annual participation in the NTEP Laboratory On-going Calibration Program, OCP (Phase II). - A device is traceable to an active Certificate of Conformance if it was manufactured or remanufactured during the period that the Certificate was maintained in active status.

2.2. Device. -- Device means any weighing and measuring device as defined in § 2.12. Commercial and Law Enforcement Equipment.

2.3. Director. -- Means the _____ of the department of _____.

2.4. National Type Evaluation Program. -- A program of cooperation between the National Institute of

Standards and Technology, other Federal agencies, the National Conference on Weights and Measures, the States, and the private sector for determining, on a uniform basis, conformance of a type with the relevant provisions of National Institute of Standards and Technology Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices," and National Conference on Weights and Measures, Publication 14, "National Type Evaluation Program, Administrative Procedures, Technical Policy, Checklists, and Test Procedures."

2.5. One-of-a-Kind Device. -- A (non-NTEP) device designed to meet unique demands for a specific installation and of a specific design which is not commercially available elsewhere (one such device per manufacturer). If a device manufactured for sale by a company has been categorized and tested as a "one-of-a-kind" device and the manufacturer then decides to manufacture an additional device or devices of that same type, the device will no longer be considered a "one-of-a-kind." This also applies to a device that has been determined to be a "one-of-a-kind" device by a weights and measures jurisdiction in one State and the manufacturer decides to manufacture and install another device of that same type in another State. In this case, the manufacturer of the device must request an NTEP evaluation on the device through the normal application process, unless NTEP has already deemed that such evaluation will not be conducted. (Amended 1998)

2.6. Participating Laboratory. -- Any State Measurement Laboratory that has been accredited by the National Institute of Standards and Technology in accordance with its program for the Certification of Capability of State Measurement Laboratories, or any State Weights and Measures Agency or other laboratory that has been authorized to conduct a type evaluation under the National Type Evaluation Program.

2.7. Person. -- The term "person" means both plural and the singular, as the case demands, and includes individuals, partnerships, corporations, companies, societies, and associations.

2.8. Remanufactured Device. -- A device to which an overhaul or replacement of parts has been performed so the device can be installed in a new location.

2.9. Repaired Device. - The maintenance or replacement of parts for a device to remain or return to service in the same location.

2.10. Type. -- A model or models of a particular device, measurement system, instrument, or element that positively identifies the design. A specific type may vary in its measurement ranges, size, performance, and operating characteristics as specified in the Certificate of Conformance.

2.11. Type Evaluation. - The testing, examination, and/or evaluation of a type by a Participating Laboratory under the National Type Evaluation Program.

2.12. Commercial and Law Enforcement Equipment.

-- (a) Weighing, and measuring equipment commercially used or employed in establishing the size, quantity, extent, area, or measurement of quantities, things, produce, or articles for distribution or consumption, purchased, offered, or submitted for sale, hire, or award, or in computing any basic charge or payment for services rendered on the basis of weight or measure. (b) Any accessory attached to or used in connection with a commercial weighing or measuring device when such accessory is so designed that its operation affecting the accuracy of the device. (c) Weighing and measuring equipment in official use for the enforcement of law or for the collection of statistical information by government agencies. ^[Note 2. see page 127]

NOTE 2: The section is identical to G-A.I. § 1.10, General Code, National Institute of Standards and Technology Handbook 44 for definition of "commercial" and "law enforcement equipment."

Section 3. Certificate of Conformance

The Director shall require a device to be traceable to a an active Certificate of Conformance prior to its installation or use for commercial or law enforcement purposes.

Section 4. Certificate of Conformance; Specific Requirements and Exemptions

(1) Except for a device exempted by this section, no person shall sell a device unless it is traceable to a an active Certificate of Conformance.

(2) Except for a device exempted by ~~subsection (3), (4), or (5)~~ of this section, no person shall use a device unless it is traceable to a an active Certificate of Conformance.

(3) A device in service in this State prior to _____, 19__, that meets the specifications, tolerances, and other technical requirements of National Institute of Standards and Technology Handbook 44 shall not be required to be traceable to a an active Certificate of Conformance.

(4) A device in service in this State prior to _____, 19__, removed from service by the owner or on which the

department has issued a removal order after _____, 19__, and returned to service at a later date shall be modified to meet all specifications, tolerances, and other technical requirements of National Institute of Standards and Technology Handbook 44 effective on the date of the return to service. Such a device shall not be required to be traceable to a an active Certificate of Conformance.

(5) A device in service in this State prior to _____, 19__, which is repaired after such date shall meet the specifications, tolerances, and other technical requirements of National Institute of Standards and Technology Handbook 44 and shall not be required to be traceable to a an active Certificate of Conformance.

(6) A device in service in this State prior to _____, 19__, that is still in use may be installed at another location in this State provided the device meets requirements in effect as of the date of installation in the new location; however, the device shall not be required to be traceable to a an active Certificate of Conformance

(7) A device in service in another State prior to _____, 19__ may be installed in this State; however, the device shall meet the specifications, tolerances, and technical requirements for weighing and measuring devices in National Institute of Standards and Technology Handbook 44, and be traceable to a an active Certificate of Conformance.

(8) One-of-a-kind Device. -- The Director may accept the design of a one-of-a-kind device without an NTEP evaluation pending inspection and performance testing to satisfy that the device complies with Handbook 44 and is capable of performing within the Handbook 44 requirements for a reasonable period of time under normal conditions of use. Indicators and load cells in all "one-of-a-kind" scale installations must have a an active NTEP CC as evidence that the system meets the influence factor requirements of Handbook 44. (Amended 1998)

(9) Repaired Device. -- If a person makes changes to a device to the extent that the metrological characteristics are changed, that specific device is no longer traceable to the active Certificate of Conformance.

(10) Remanufactured Device. -- If a person repairs or remanufactures a device, they are obligated to repair or remanufacture it consistent with the manufacturer's original design; otherwise, that specific device is no longer traceable to a an active Certificate of Conformance.

(11) Copy of a Device. -- The manufacturer who copies the design of a device that is traceable to a an active Certificate of Conformance, but which is made by another company, must obtain a separate Certificate of Conformance for the device. The Certificate of

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conformance for the original device shall not apply to the copy.

(12) Device Components -- If a person buys a load cell(s) and an indicating element that are traceable to Certificates of Conformance and then manufactures a device from the parts, that person shall a an active Certificate of Conformance for the device.

Section 5. Participating Laboratory and Agreements

The Director is authorized to:

(1) Operate a Participating Laboratory as part of the National Type Evaluation Program. In this regard, the Director is authorized to charge and collect fees for type evaluation services.

(2) Cooperate with and enter into agreements with any person in order to carry out the purposes of the act.

Section 6. Unlawful Acts

~~It shall be unlawful for any person to:~~

~~(1) Use a device in a commercial application unless a an active Certificate of Conformance has been issued for such device unless exempt in Section 4.~~

~~(2) Sell a device for use in a commercial application unless a an active Certificate of Conformance has been issued for such device unless exempt in Section 4.~~

Section 7 6. Revocation of Conflicting Regulations

All provisions of all orders and regulations heretofore issued on this same subject that are contrary to or inconsistent with the provisions of this regulation, and specifically, are hereby revoked.

Section 8 7. Effective Date

This regulation shall become effective on -.

Appendix B

Labeling Guidelines for Chamois

These requirements are based on the Uniform Packaging and Labeling Regulation in the 1999 Edition of NIST Handbook 130 □Uniform Laws and Regulations□ and regulations and guidelines of the Federal Trade Commission.

General

The following information must be declared on the principal display panel of the chamois package. The principal display panel is the tag, or label that consumers can examine under normal and customary conditions of display.

- . **Identity - what the package contains. Packages are required to declare identity in terms of (i) the name specified in or required by any applicable Federal or State law or regulation or, in the absence of this, (ii) the common or usual name or, in the absence of this, (iii) the generic name or other appropriate description, including a statement of function.**
- . **Net Quantity of Contents - how many items the package contains and the area of the item(s)**

The following information may appear anywhere on the package.

- . **Responsibility – the party responsible for packaging or distributing the product.**

Section 1. Declaration of Identity

Chamois is a natural product made of sheepskin which has been oil-tanned. In 1964, the Federal Trade Commission issued an advisory opinion stating that using the word □chamois□ on a product (e.g., □Artificial□ Chamois, □Synthetic□ Chamois, □Pig Chamois□ or □Man-Made□ Chamois) that is not made from oil-tanned sheepskin is an unlawful and deceptive.

For example: **Chamois, Natural Chamois Leather**

Section 2. Declaration of Net Quantity of Contents

The following information is required to appear on the lower 30 percent of the principal display panel of all packages:

- . **Count**

The package must include a count declaration (e.g., 1 Chamois) unless the package contains six or less items are fully visible to the consumer.

- . **Area**

Chamois packages must have area declarations in both inch-pound and metric units.

Metric

- . for areas that measure less than 1 square meter, the area shall be stated in square decimeters and decimal fractions of a square decimeter, or in square centimeters and decimal fractions of a square centimeter;

- . for areas that measure 1 square meter or more, the area shall be stated in square meters and decimal fractions to not more than three places.

To facilitate value comparison and simplify the measurement process, chamois should be measured in one-quarter square foot (2.32257 decimeter) increments. Dimensions should be rounded down to avoid overstating the area.

For example: **2 square feet (18.5 square decimeters) or 2 ft² (18.5 dm²)**

Conversion Factors:

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1 square foot = 9.29030 dm²

1 square inch = 6.4516 cm²

1 square yard = 83.6127 dm²

Inch-Pound Units

. for areas that are less than 1 square foot (929 cm²), the area declaration shall be expressed in square inches and fractions of square inches;

. for areas of 1 square foot (929 cm²), or more, but less than 4 square feet (37.1 dm²), the area shall be expressed in square feet with any remainder expressed in square inches or in fractions of a square foot;

. for areas of 4 square feet (37.1 dm²) or more, the area should be expressed in terms of the largest whole unit (e.g., square yards, square yards and square feet, or square feet) with any remainder expressed in square inches and fractions of a square inch, or in fractions of the square foot or square yard.

Chamois labeled for retail sale is exempt from these requirements if the area of a full skin is expressed in terms of square feet with any remainder in terms of the common or decimal fraction of the square foot (929 cm²) or, (b) the area for cut skins of any configuration is expressed in terms of square inches and fractions thereof. Where the area of a cut skin is at least one square foot (929 cm²) or more, the statement of square inches shall be followed in parentheses by a declaration in square feet with any remainder in terms of square inches or common or decimal fractions of the square foot.

Prohibited Labeling Practices

. . . Do not use qualifying terms or phrases (e.g., ☐Approximate Size,☐Size when Wet,☐Up to 20% Larger When Wet☐).

• . Do not use unacceptable symbols (e.g., using (□) to indicate inches.

3. Declaration of Responsibility

The name and address of the manufacturer, packer, or distributor must be conspicuously specified on the label of any package that is kept, offered, or exposed for sale, or sold anywhere other than the premises here packed. The name shall be the actual corporate name, or, when not incorporated, the name under which the company does business. This declaration does not have to appear on the principal display panel.

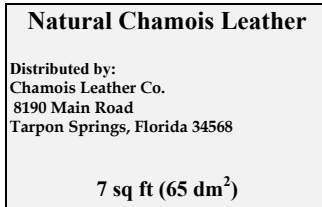
For example:

Chamois Tanning Company
8190 Main Road
Tarpon Springs, Florida 34568

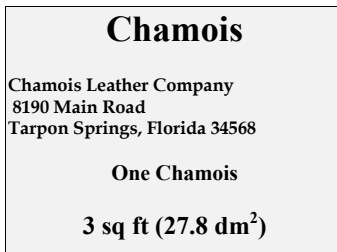
The address shall include street address, city, State (or country if outside the United States), and Zip Code (or the mailing code if any, used in countries other than the United States); however, the street address may be omitted if it is shown in a current city directory or telephone directory.

Sample Labels

1. If one natural chamois is in a see-through package, the following label would be acceptable:



2. The next sample would apply if one chamois is in a package and the statement of identity does not clearly express the fact the package only contains one unit.



Appendix C

Procedure for Checking Area Measurement of Chamois

Definition

Chamois is natural leather made from skins of sheep and lambs that has been oil-tanned. Chamois are irregularly shaped and sized which makes area measurement difficult. Because of these characteristics, an accurate area determination can only be made using an internationally recognized method of conditioning (rehydrating) and measurement:

- Chamois is produced in a wet manufacturing process, so it has high moisture content at time of measurement. Chamois is hygroscopic; therefore, its dimensions and total area changes as it loses or absorbs moisture.

- Chamois is subject to wrinkling and packing of fiber bundles that results from folding, packing, and shipping.

- The thickness and density, and, therefore, the weight per unit area of chamois skins will vary from skin to skin; therefore, an estimated gross weight procedure cannot be used to check this product.

II. Standard Test Conditions

As with other hygroscopic products, reasonable variations in measure must be allowed if caused by ordinary and customary exposure to atmospheric conditions that normally occur in good distribution practice. Federal and international standards specify procedures to restore the moisture content of chamois so that tests to verify dimensions and area can be conducted.

Federal Test Method Standard - Number 311 (January 15, 1979) defines the standard atmospheric condition for chamois as 50 ± 4 percent relative humidity and 23 ± 2 °C (73.4 °F). The chamois is considered to be at equilibrium moisture when the difference in two successive weighings, made at 1-hour intervals, is no greater than 0.25 percent (e.g., the maximum change in weight on a 100 g sample in two successive weighings is less than 1/4 g (250 mg).

III. Test Procedures

The area of chamois is verified using a two-stage test procedure.

The first stage is a field audit using the template test procedure. This test is used for field audits because it is simpler to perform and does not require the chamois to be conditioned. The field audit is used to identify chamois that are potentially under measure. It is not as accurate as the gravimetric procedure because some error results from reading the area from the template.

The gravimetric procedure should be used for compliance testing because it includes conditioning (rehydrating) the chamois.

A. Select a random sample of chamois and use the Template Test Method to determine the area of each sample.

1. Template Test Method

Equipment

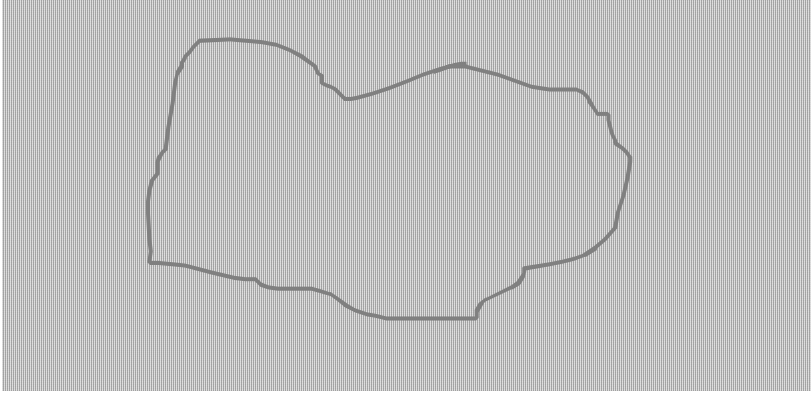
Use a transparent, flexible template that is graduated in square inches or centimeters. The template shall be large enough to completely cover the chamois under test.

Procedure

Place the template over the chamois specimen on a smooth surface. Determine the area by counting the number of squares that cover the surface of the chamois. Estimate parts of the template that do not completely cover the chamois by

adding the number of partially covered blocks (See Figure 1). Compute the total area and go to Section B. Compliance to determine if further action is necessary.

Figure 1.



Decision Criteria

If the average minus error exceeds 3 percent of the labeled area, the chamois may be violative. To confirm the finding, take the samples to a laboratory where they can be conditioned and tested by using the gravimetric test procedure.

2.0. Gravimetric Test for Area Measurement

This test cannot be performed in the field because the samples must be conditioned with water prior to testing. This method is intended for use in checking full or cut skins, or pattern shapes. Open and condition all of the packages in the sample prior to determining their area on the recommended paper. Conditioning and verifying chamois can be accomplished without destroying the product. When the tests are completed, the chamois can be repackaged for sale, so do not destroy the packaging material.

2.1 Equipment and Material Required:

- (a). Balance with a capacity of 1 kg that is accurate to at least ± 0.01 g and a load receiving element of adequate size to properly hold the chamois.
- (b). Atomizer or trigger type sprayer and sealable, airtight polyethylene bags,
- (c). Medium weight artists drawing paper. (e.g., Drawing Paper, Medium Weight (100 lb), regular surface or comparable),
- (d). Household iron with low temperature settings 30° to 40° Centigrade (86° to 104° F),
- (e). Rule or tape that is graduated in centimeters or inches,
- (f). Instrument for cutting paper (razor blade, scissors, or cutting board).

2.2. Uniform Sizes

Chamois are labeled in terms of square decimeters and square feet, and are sized in increments of 1/4 square feet (e.g., 1 sq ft, 1-1/4 sq ft, and 1-1/2 sq ft). Separate the chamois into different sizes and define the inspection lot by specific sizes.

3.0 Sample Conditioning

3.1 Remove samples from their packages; weigh and record each weight. Using an atomizer-type sprayer, spray water in the amount of 25 percent of the weight of the skin uniformly over its area. Place wetted chamois in an airtight polyethylene bag; seal the bag, and leave it in this condition at room temperature for 24 hours.

3.2 Open the bag; remove the chamois; reweigh the chamois to confirm that it retained maximum moisture, (i.e., confirm that the difference in the two consecutive weighings conducted an hour apart does not exceed 0.25 percent.) Place the chamois flat on a continuous piece of medium weight artists drawing paper,

3.3 To remove wrinkles and make the chamois lay flat, use a normal domestic iron that is heated to a maximum of 30°- 40° C (86° to 104° F.) Place the iron on the bottom of the skin, and iron the skin up the center to the top. Then, iron the skin from the center out to each side. Iron until the skin is fully extended and perfectly flat.

4.0 Measurement

4.1 Immediately after ironing, carefully draw around the outline of the skin on the paper. Remove the skin; carefully cut along the outline of the skin; weigh the cut-out pattern, and record to the nearest 0.1 gram as W1.

4.2 Lay out the pattern and cut an accurately measured rectangle of a size not less than one-half the area of the pattern. Weigh the cut-out rectangle and record the weight to the nearest 0.1 gram as W2. Calculate the area of the rectangle cut from the patterns by multiplying length by width and record in centimeters or square inches as A.

For metric - calculate the area of the original skin being checked as follows:

$$W1/W2 \times A = \text{Skin Area in cm}^2 / 100 = \text{Area in Square Decimeters}$$

For inch-pound units - calculate the area of the original skin being checked as follows:

$$W1/W2 \times A = \text{Skin Area in square inches} / 144 = \text{Area in Square Feet}$$

B. Compliance

Compute the average area for all skins in the sample lot. The average area should equal the size that is declared on the packages. If the average area is less than the declared size, compute the appropriate sample error limit using the sample correction factor from Table 2.1 in the 4th Supplement of NIST Handbook 133. Compute the sample standard deviation by using the errors determined by subtracting the calculated skin area for each sample from the declared area. The Maximum Allowable Variation (MAV) for area declarations on chamois is three (3) percent of the labeled area.

Appendix D

Labeling Guidelines for Natural and Synthetic Sponges

These requirements are based on the Uniform Packaging and Labeling Regulation in the 1999 Edition of NIST Handbook 130 “Uniform Laws and Regulations” and regulations and guidelines of the Federal Trade Commission. All indicated dimensions and conversions from metric to inch-pound units are approximates only and are used for illustrative purposes only.

General

The following information must be declared on the principal display panel (PDP) of a package of sponge(s). The PDP is the part of label (or package) most likely to be displayed, presented, shown, to or examined by consumers. A tag or spot label may be used.

Identity - what the package contains

Net Quantity of Contents - how many items in the package and the dimensions of the item(s)

The following information may appear anywhere on the package.

Responsibility - the name of the processor or distributor

Section 1. Declaration of Identity

a. A declaration of identity that clearly describes the origin and other relevant information about the sponge must appear on the label of each package. The identity of a sponge must include information about its origin (i.e., that it is a natural or synthetic sponge). The identity shall be in terms of (i) the name specified in or required by applicable Federal or State law or regulation or, (ii) the common or usual name or, (iii) the generic name or other appropriate description.

For example:

Sea Wool Sponge, Rock Island Sponge, Sea Grass Sponge, Sea Yellow Sponge, or Atlantic Silk Sponge

- Origin - Natural or Synthetic
- For natural sponges, the label must specify if they are “Cut” or “Form.” “Cut” sponges are those that have been cut into halves, quarters, or fourths while “forms” are whole sponges.
- For natural sponges, indicate type of sponge (e.g., “silk,” “seawool,” or “yellow”)

b. Identifiers

- Terms which indicate locations of origin on some natural sponges (e.g., “Atlantic Sea Sponge) are permitted to be used for identification if they accurately describe the source of the sponge.
- Use of terms that may be interpreted by consumers to imply quality, durability, or “expert” endorsement (e.g., “professional quality sponge”) are permitted as identifiers if they are not misleading. However, terms that imply quality should be used with care if they are not based on a recognized grading system. Use of terms to describe sponge texture such as “fine”, “medium”, or “coarse” are acceptable.

Section 2. Declaration of Net Quantity of Contents

The following information must appear on the lower 30 percent of the principal display panel of all packages:

- Count

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The package must include a count declaration (e.g., 1 sponge) unless the statement of identity clearly expresses the fact that only one unit is contained in the package. A package containing two or more units shall bear a statement in terms of count (e.g., 2 sponges).

- Dimensions

- The package must include the dimensions of the sponges in inches and centimeters.

To facilitate value comparison and simplify the measurement process, sponges should be measured in one-half inch (one-centimeter) increments. Dimensions should be rounded down to avoid overstating the size of a sponge.

For example: 6 in, 6-1/2 in, and 7 in for inch/pound declarations

15 cm, 16 cm, and 17 cm for metric declarations

- Synthetic sponges: the dimensions shall include length x width x height (thickness). Either unit of measure can be the primary declaration (e.g., the metric or inch-pound units can be presented first).

1 - Sponge 17 x 10 x 5 cm (7 x 4 x 2 in)

- Natural sponges: the declaration shall be a single measurement representing the maximum dimension of one axis of a sponge that is passed through a circular template. When measured, the sponge is “classified” as a specific size when at least three, (including two opposing) points of the sponge touch the template (e.g. see graphic on the following page the sample sponge is designated as a 7- inch (17 cm) sponge).

As the following pictures show, natural sponges are irregular in size and shape and have traditionally been measured using this procedure. It is difficult to develop a meaningful or cost effective measurement process that would provide a means of direct comparison between synthetic and natural sponges based on dimensions. Requiring declarations, such as average height, length, or width of natural sponges procedures, would increase costs for industry and consumers.



Sea Wool Sponges

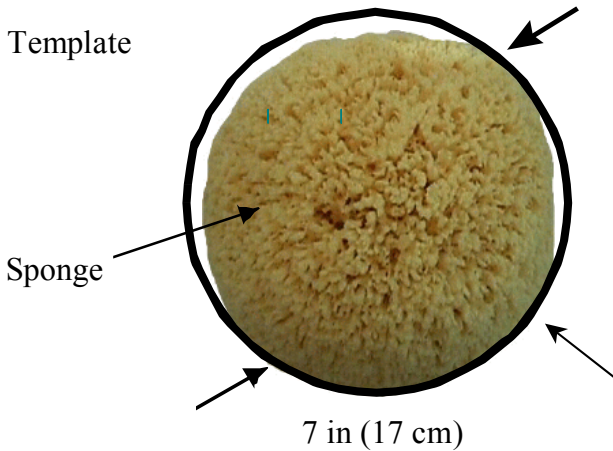


Silk Sponges

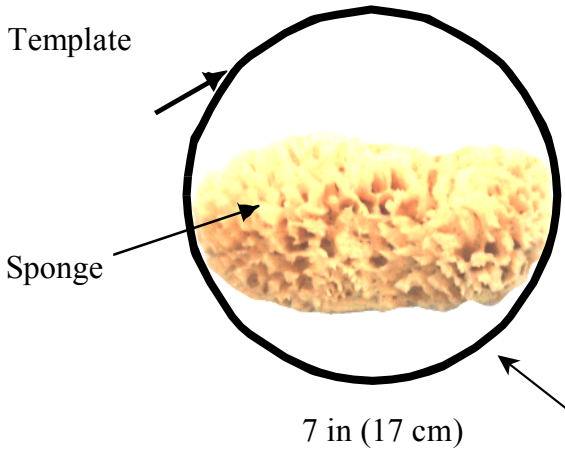


Sea Grass Sponges

- This graphic illustrates an irregular form of a natural sponge passing through a 7-inch (17 cm) template and touching at least 2 opposite points. This sponge could be labeled 7 inches.



- For banana sponges the size will be determined as shown below. This sponge is 7 inches (17 cm).

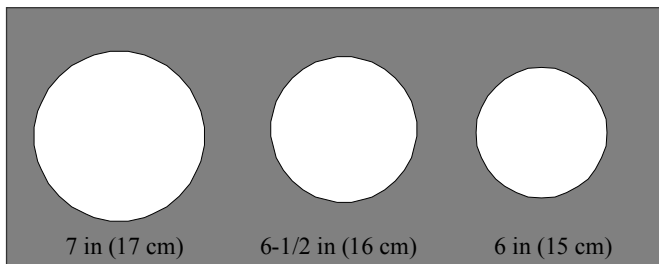


Good Measurement Practice

- Dimensions are determined with the sponge wet.
- Measuring templates (see photo below for the currently used type templates):
 - should be constructed of rigid metal or plastic material.

Laws and Regulations Committee

- circular openings should be graduated in increments of one-half inch (one centimeter)



- The error in the circular openings shall not be greater than $\pm 1/32$ inch (± 0.79 mm) as specified in Table 2. Tolerances in Section 5.52. Linear Measures of NIST Handbook 44 "Specifications, Tolerances, and Technical Requirements for Weighing and Measuring Devices."



Prohibited Labeling Practices

- Declaring country of origin that is not accurate.
- Declaring ranges of dimensions - (e.g., 4"- 5" inches) or using terms such as "half or semi-form" instead of either "cut" or "form."
- Using qualifying terms (e.g., "Wet Size," "Approximate" or "Jumbo")
- "Anti-bacterial" claims must meet Environmental Protection Agency requirements.
- Using type size that does not meet minimum height requirements.
- Using unacceptable symbols (e.g., 2"; using (") for inches is not acceptable)

3. Declaration of Responsibility

The name and address of the processor or distributor must be specified on the label of any package that is kept, offered, or exposed for sale, or sold anywhere other than the premises where packed. The name shall be the actual corporate name, or, when not incorporated, the name under which the business is conducted. For example:

**Processed by
Argonaut Sponge Company
8190 Main Road
Tarpon Springs, Florida 34568**

The address shall include street address, city, State (or country if outside the United States), and Zip Code (or the mailing code if any, used in countries other than the United States); however, the street address may be omitted if this is shown in a current city directory or telephone directory.

Sample Labels

If a natural sponge is in a box, carton, or package that does not permit consumers to see how many sponges are in the box, the package must include a count declaration (e.g., 1 sponge) unless the statement of identity clearly expresses the fact that only one unit is contained in the package. A package containing two or more units shall bear a statement in terms of count (e.g., 2 sponges). the following sample label would apply.



If a package does not permit the consumer to see how many sponges are the box - it must include a count declaration (e.g., 1 sponge) unless the statement of identity clearly expresses the fact that only one unit is contained in the package. A package containing two or more units shall bear a statement in terms of count (e.g., 2 sponges). A transparent bag of small pieces of sponge may be sold on the basis of count if the words “Irregular Dimensions” appear in conjunction with the declaration of count (e.g., 10 Sponges - Irregular Dimensions.)

Synthetic Sponge

Made by:

Argonaut Sponge Company

8190 Main Road

Tarpon Springs, Florida 34568

1 - Sponge 17.7 x 10 x 5 cm (7 x 4 x 2 in)

Appendix E.

Guidelines for Administrative Decisions Regarding Premium Diesel

Introduction

Premium diesel was first defined in 1998 as a result of voting action at the NCWM annual meeting. Prior to that, no uniform definition that was approved through a standards development organization existed. Because the scope of the NCWM definition goes beyond traditional fuel testing parameters, certain administrative aspects for a regulatory agency justify discussion.

The NCWM definition encompasses five parameters from which the marketer may choose when formulating a premium package: Cetane Number, Low Temperature Operability, Energy Content, Fuel Injector Cleanliness, and Thermal Stability. Requirements for claiming cetane number, low temperature operability, and energy content are more traditional elements of diesel fuel testing and do not warrant a detailed discussion in this document. Because traditionally, fuel cleanliness and thermal stability have been less familiar parameters for diesel fuel, this document will focus primarily on those properties. Additionally, this document will lend guidance on sample volumes necessary to conduct laboratory testing.

Fuel Cleanliness Guideline

The fuel cleanliness criterion of the NCWM Premium Diesel regulation is based on performance in the Cummins L10 Injector Depositing Test. This criterion can be met by either the use of a detergent additive or by demonstrating that the fuel as sold can pass the Cummins L10 test due to inherent cleanliness. Compliance testing initiated by the weights and measures official should be conducted with the Cummins L10 Injector Depositing Test using the latest test method as approved by the ASTM Cummins L10 Injector Depositing Test Surveillance Panel. As of September 1, 1998, this is draft test procedure number 4a.

From an enforcement point of view, the marketer must be prepared to provide sufficient data to substantiate the detergency claim to a state weights and measures director.

When the criterion is met by using a detergent additive, the marketer must have passing results from a Cummins L10 Injector Depositing Test. The test must be conducted using Cat 1K reference fuel. The test data must also include the treatment level (amount) of additive that was used in the performance test to achieve the passing result.

To verify the proper addition of additive into diesel fuel, the marketer is expected to maintain records that allow reconciliation between additive consumption at the required additive treatment rate shown in the test data and the volume of premium diesel fuel sold. It is recommended that this Volume Additive Reconciliation be compiled on a quarterly basis and that records be maintained for a minimum of one year. A sample additive usage form is provided as a guide at the conclusion of this document.

The marketer must also maintain a chemical and physical description of the detergent additive that is being used. This description can be compared to the chemical and physical properties of an additive sample drawn from the marketer's facility. This allows the inspector to assure that the additive being used is substantially similar to the additive used in developing the required supporting documentation. The chemical and physical description of the detergent additives should include as a minimum:

- Specific Gravity
- Viscosity @ 20 °C and 100 °C
- Elemental Analysis *or* Fourier Transformation Infrared Analysis

It is important to note that many diesel fuel additives that can be used under the NCWM regulation may contain a number of different components, including active ingredients and solvents. All documentation and additive descriptions should reflect the additive package that the inspector will encounter in the field. Additionally, it is common practice in the industry to switch additives between summer and winter to meet seasonal performance and additive handling needs. The director of the responsible jurisdiction should consider this when determining the timing of additive package testing for performance criteria or compositional analysis.

To check the actual performance of the detergent additive in use, the inspector may collect a sample of the actual additive used at the marketer's facility to produce premium diesel fuel. This sample can be tested using the latest test procedure in the Cat I-K fuel as recommended above. This proof testing is at the discretion of the inspecting agency.

If the marketer chooses to demonstrate the inherent cleanliness of the fuel being sold (fuels that can meet the requirement without detergent additive or by using a lower than recommended concentration of additive), the fuel must be tested annually at the marketer's expense. The regulatory agency must agree with the test date. If the annual test fails to comply with the rule, the marketer pays for any additional testing. If the test fails to comply with the rule, the director has the authority to initiate enforcement as authorized by the governing law of that jurisdiction. To continue to market the fuel as premium diesel, the marketer may be requested to provide a description of production adjustments along with a newly acquired L-10 pass certificate to the Director.

All documentation associated with the detergency criterion should be made available to the director within a reasonable period of time upon request. It is recommended that the data be provided within 30 days of the request. Data sharing among the various regulatory agencies may be an especially useful tool for assurance of fuel cleanliness compliance. In the event a regulatory agency has reason to suspect a detergent package being used is less than adequate to meet premium diesel standards, the regulator may benefit from obtaining any available data on testing conducted on that package by other regulatory agencies. Additionally, when fuels that are relying on the inherent cleanliness of the fuel to qualify as premium diesel are marketed across jurisdiction lines, it would be reasonable to request data from the Director of the jurisdiction in which the point of product distribution is located prior to requiring the marketer to provide new test data.

Thermal Stability Guidelines

The test method adopted by the NCWM, Octel America F21-61, is a well-established and reliable indicator of the ability of the fuel to withstand high temperature exposure for a prolonged period of time (180 minutes, 150 °C). This test is currently being developed into an ASTM test method. The procedure has been drafted into ASTM format and a round-robin test program to determine the test's repeatability and reproducibility limits has been conducted. While this method will not be official until accepted by ASTM, it is expected that the reproducibility of the test method will be approximately 10% at the 80% reflectance level based on the use of the prescribed reflectance meter.

Sample Volume Guidelines

Detergency

Test Method: Cummins L10 Injector Depositing Test, draft test procedure number 4a

Volume of Fuel Required/Test: 320 - 340 gallons

Volume of Additive for testing with CAT-1K reference fuel as specified by the additive producer.

Energy Content (Btu)

Test Method: ASTM D240 Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter

Volume of Fuel Required/Test: 50 ml (recommend 100 ml)

Low Temperature Operability

Cloud Point

Test Method: ASTM D2500 Cloud Point of Petroleum Products

Sample Collection: Obtain samples in accordance with Practices ASTM D4057 or ASTM D4177

Volume of Fuel Required/Test: 50 ml (recommend 100 ml)

LTFT

ASTM D4539 Filterability of Diesel Fuel by Low-Temperature Flow Test

Volume of Fuel Required/Test: 200 ml (recommend 500 ml)

Thermal Stability

Test Method: Octel F21-61

Volume of Fuel Required/Test: 50 ml (recommend 100 ml)

Cetane

Test Method: ASTM D613 Cetane Number of Diesel Fuel Oils

Volume of Fuel Required/Test: 1000 ml (recommend 2000 ml)

Report of the Committee on
Specifications and Tolerances

Darryl Brown, Chairman
Iowa Department of Agriculture
Iowa

Introduction

This is the final report of the Committee on Specifications and Tolerances (S&T) for the 84th Annual Meeting of the National Conference on Weights and Measures (NCWM). The report is based on the 84th Interim Report offered in the Conference “Program and Committee Reports” (NCWM Publication 16), the Addendum Sheets issued at the Annual Meeting, and actions taken by the membership at the Voting Session of the Annual Meeting.

Table A identifies the agenda items in the report by Reference Key Number, Item Title, and Page Number. The item numbers are those assigned in the Interim Meeting Agenda. Voting items are indicated with a “V” after the item number. Items marked with an “I” after the reference key number are information items. Items marked with a “D” after the key number are developing issues. The developing designation indicates an item has merit; however, the item is returned to the submitter to develop further before any action is taken at the national level. The Committee withdrew items marked with a “W.” Items marked with a “W” generally will be referred to the regional weights and measures associations because they either need additional development, analysis, and input, or did not have sufficient Committee support to bring them before the NCWM.

The attached report contains many recommendations to revise or amend National Institute of Standards and Technology (NIST) Handbook 44, 1999 Edition, “Specifications, Tolerances, and other Technical Requirements for Weighing and Measuring Devices.” Proposed revisions to the handbook are shown in **bold face print** by ~~crossing out~~ text to be deleted, and underlining information to be added. Requirements that are proposed to be nonretroactive are printed in *italics*. Entirely new paragraphs or sections proposed for addition to the handbook are designated as such and shown in **bold face print**.

Note: The policy of the National Institute of Standards and Technology is to use metric units of measurement in all of its publications; however, recommendations received by the NCWM technical committees have been printed in this publication as they were submitted and may, therefore, contain references to inch-pound units.

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Voting Results

| Reference Key Number | House of State Representatives | | House of Delegates | | Results |
|-------------------------------------|--------------------------------|----------------|--------------------|----------------|---------------|
| | Yes | No | Yes | No | |
| 300 (Consent Calendar) | 40 | 1 | 68 | 0 | Passed |
| 310-2A | 42 | 1 | 66 | 1 | Passed |
| 320-3 | 36 | 5 | 61 | 4 | Passed |
| 320-8 | 42 | 0 | 67 | 0 | Passed |
| 320-9 | 43 | 0 | 69 | 0 | Passed |
| 330-2 | 43 | 0 | 64 | 0 | Passed |
| 331-1 | 31 | 7 | 39 | 25 | Passed |
| 337-2 | 43 | 0 | 65 | 0 | Passed |
| 354-1 | 44 | 0 | 67 | 0 | Passed |
| 300 (Report in its Entirety) | All Ayes | No Nays | All Ayes | No Nays | Passed |
| Voice Vote | | | | | |

**Details of All Items
(In order by Reference Key Number)**

310

General Code

310-1 I G-S.1. Identification and Appendix D, Definitions for Manufactured and Remanufactured Devices

Source: Carryover Item 310-1 (This item originated from the Central Weights and Measures Association and first appeared on the Committee's 1997 agenda.)

Recommendation: Add the following new paragraph G.S.1.1. and definition of "remanufacturer."

G-S.1.1. Remanufactured devices shall be clearly and permanently marked with the name or trademark of the remanufacturer.
[Nonretroactive as of January 1, XXXX]

Remanufacturer – A company or individual who produces remanufactured devices.

Add the definition for "remanufactured device" in NIST Handbook 130 to NIST Handbook 44:

Remanufactured Device. -- A device to which an overhaul or replacement of parts has been performed so the device can be installed in a new location.

Discussion: Since 1997, the Committee has considered several proposals to add a new paragraph to G-S.1. to require remanufacturers to label devices. Additional background information on this item is found in the S&T Committee's 1997 and 1998 final reports.

At the July 1998 NCWM Annual Meeting, the Committee considered withdrawing this item. The Committee heard requests from the Scale Manufacturers Association (SMA), the Gasoline Pump Manufacturers Association (GPMA), and the Meter Manufacturers Association (MMA) to reconsider and keep the item on the agenda. The associations indicated that the issue of labeling of devices when they are serviced by other than the original equipment manufacturer (OEM) still needs to be addressed. The associations also agreed to work together to develop some appropriate language by the January 1999 NCWM Interim Meeting. The associations noted that, if they were unable to develop any language by January 1999, then they would support withdrawing this issue. The Committee agreed to change the status of this item to informational under these conditions and charged industry with the task of (1) reaching a consensus on appropriate language that describes labeling requirements for non-original manufacturer equipment and (2) determining when equipment should receive non-original manufacturer equipment status.

During the October 1998 meeting of the Southern Weights and Measures Association, representatives of the SMA, GPMA, the Petroleum Equipment Institute (PEI), and one remanufacturer met to finalize the above proposal on marking and defining remanufactured devices. Industry believes that this completes the work that it agreed to finish by the 1999 NCWM Interim Meeting in return for keeping the issue of remanufactured devices on the S&T agenda. The group concluded that current Handbook 130 definitions are adequate and should be included in Handbook 44. The group also noted that the definitions exclude moving a device from one location to another and any repaired devices. Handbook 130 defines a "repaired device" as the maintenance or replacement of parts for a device to remain or return to service in the same location. Note that the regional weights and measures associations met prior to the latest revisions to the proposal.

The Northeastern Weights and Measures Association (NEWMA) expressed concern that earlier proposed language would make field enforcement difficult and requested the opportunity to review the latest proposal. In the meantime, the NEWMA believes that any language developed must be acceptable to both the original equipment manufacturers and remanufacturers.

During the October 1998 meeting of the Western Weights and Measures Association (WWMA), the WWMA noted its support of the associations' efforts to arrive at definitions which are amenable to all parties, including weights and measures officials.

The Southern Weights and Measures Association recommended this issue remain informational until the associations can develop language which is acceptable to all interested parties including weights and measures officials.

At the 1999 Interim Meeting, the S&T Committee reviewed the associate industry's latest proposal to require remanufacturers to label devices and to define "remanufacturer," "remanufactured devices," and "repaired devices." The Committee appreciates the associate industry's work over the past 3 years to develop definitive language which all parties accept. The Committee agreed with industry that the proposed language is the first small step, but it believes this approach leaves weights and measures officials facing an enforcement dilemma.

Since 1997, the Committee asked industry for directions about how to apply the proposed labeling requirements and definitions. The Committee agreed that in the latest proposal the term "overhaul," is still unclear, and the proposal lacks guidelines to determine when a device has "remanufactured" status.

The Committee discussed whether or not weights and measures jurisdictions have the capability to allocate resources to determine if and who remanufactured a device. If the proposed definitions are placed in Handbook 44, then jurisdictions must enforce the requirement and determine if devices are in or out of compliance. The Committee is concerned that some changes may only be apparent to the OEM. One Committee member had concern about the consequences for jurisdictions which test and approve devices and receive notification that the devices lack the required additional marking information. Weights and measures officials have primarily worked to determine if a device complies with Handbook 44. The Committee still has concerns that many smaller remanufacturing and repair operations affected by the proposal are not aware of the events taking place.

The Committee recognizes that NTEP policies are derived from Handbook 44 requirements. The Committee questions whether or not the S&T Committee is the appropriate body to decide on the marking requirements for remanufactured devices because the point at which a device becomes a "remanufactured device" is unclear. Verification that a device is remanufactured might be compared to some of the criteria which can only be performed in a laboratory environment by NTEP. The Committee believes that current NTEP policies provide some guidelines to determine the party who is responsible for a device. The Committee believes the NCWM may eventually determine that the guidelines necessary to enforce the proposal are an integral part of NTEP policy rather than a technical issue.

One alternative approach the Committee considered was to address this item as an amendment to NIST Handbook 130 in the Uniform Regulation for the Voluntary Registration of Servicepersons and Service Agencies for Commercial Weighing and Measuring Devices to require service agencies to mark a device.

During the 1999 Interim Meeting, comments from remanufacturers indicate that a device which is remanufactured by the OEM must also be relabeled. NTEP policy requires an OEM to report on a device with an NTEP Certificate of Conformance if any modifications to that device alter the original design or affect the metrological characteristics covered by the Certificate of Conformance.

The Gasoline Pump Manufacturers Association indicated their support for the latest proposal because it agrees with the NTEP Committee and Board of Directors work to ensure that "production meets type" and current NTEP policies. One GPMA member noted the widespread support of the latest proposal from OEMs, remanufacturers, and trade organizations. This individual also discussed the benefits to the end-user and consumer who will be able to readily identify remanufactured equipment because of the additional label. However, the same individual also noted some uncertainty about whether or not the requirement is enforceable. The MMA believes that this is the closest that the parties who were asked to agree on wording for G-S.1. have come to reaching a unanimous consensus.

The Committee considered modifying the proposed text to clarify the definition for "remanufactured." The clarification would state that either remanufacturing must be the business' primary duty or remanufacturing must bring the device back to a like new condition. The Committee also reviewed a marking requirement which required additional labeling if changes were made to the original device design or to the device's metrological characteristics; the term "remanufacturer" never appeared in this proposed requirement. One Committee member had concern about how such a general labeling requirement would impact the repair industry in jurisdictions with no service industry regulations.

For the second time, the Committee considered withdrawing Item 310-1 because it is not fully developed and lacks the most critical criteria for implementation. The Committee acknowledged that determining who is responsible for a device is essential to assuring proper installation, maintenance, and operation of equipment. After lengthy deliberations, being divided on several votes, and hearing comments to pursue this issue, the Committee gave the proposal informational status. The Committee decided on this status with the understanding that the Board of Directors will convene a task force to resolve the unanswered issues regarding the enforcement of this proposal.

The Committee recommends that the task force represent all parties the proposed requirements affect. The Committee has struggled at length with the issue of determining the party responsible for a device. The Committee cautions the task

force to take adequate time to objectively analyze and answer the pressing issues listed below before returning to the NCWM. The Committee encourages the task force to consult with the NCWM's legal counsel or other available legal counsel to ensure that the guidelines jurisdictions use to enforce remanufacturer requirements are uniform, fair, and follow due process. The Committee asks the task force for guidance in addressing the following issues:

Justification

- Why is the requirement necessary? If criteria that determine when a device must be reevaluated are in place, how will a labeling requirement change anything?

Enforcement

- When is a device remanufactured? The terms remanufactured, repaired, rebuilt, etc. ("r words") are all interrelated; therefore, should other words, such as repaired, rebuilt, refurbish, or similar terms be defined if only remanufactured devices will be required to be labeled?
- Will the requirement address the location of additional markings to ensure visibility and access?
- What is the minimum amount of remanufacturer information necessary (e.g., manufacturer's state, phone number, or date of work completed, etc.)?
- If new criteria to determine when to relabel are established, will single or multiple criteria be imposed on the remanufacturer to meet additional labeling requirements? If multiple businesses have performed work on a device, what is the labeling requirement?
- What action does an NTEP state need to take when encountering a remanufactured device to avoid any liability for restriction of trade?
- What action should be taken when a jurisdiction encounters equipment which falls into the category of a remanufactured device that does not have the additional label? Should the device be tested? Who should pursue getting a device labeled (owner, official, or OEM)? Does the current proposal intend to hold only the device owner responsible?
- ☐ Should an unlabeled remanufactured device which was inadvertently tested and approved by a jurisdiction be removed from service?

NTEP

- What is the impact on NTEP if this proposal is not adopted?
- ☐ Does a remanufacturer need a new Certificate of Conformance (CC)? If so, at what point will the CC be required? Must a remanufactured device be covered under a separate CC?
- ☐ When does NTEP end? Is it when the device is approved at the initial installation; when warranty expires; or, does it apply from "cradle to grave?"

The NCWM Board of Directors agreed to the Committee's recommendation to appoint a task force to examine the issues of how to enforce the proposal and clarify the impact on the NTEP Program. The task force is scheduled to meet July 29, 1999, at the NCWM Annual Meeting in Burlington, Vermont. The Committee encourages the task force to work to resolve the enforcement and NTEP issues by the 2000 Interim Meeting.

310-2A V

G-S.1. Identification; Serial Number

(This item was adopted.)

(Item 310-2 was separated into two parts 310-2A and 310-2B during the 1999 Interim Meeting to facilitate review of the issues involved.)

Source: National Type Evaluation Technical Committee (NTETC) Weighing Sector

Recommendation: Modify paragraph G-S.1. Identification as follows:

G-S.1. Identification. – All equipment, except weights and separate parts necessary to the measurement process but not having any metrological effect, shall be clearly and permanently marked for the purposes of identification with the following information:

(a) the name, initials, or trademark of the manufacturer or distributor;

(b) a model designation that positively identifies the pattern or design of the device;

(c) except for equipment with no moving or electronic component parts, a nonrepetitive serial number; and

[Nonretroactive as of January 1, 1968]

(d) the serial number shall be prefaced by words, an abbreviation, or a symbol, that clearly identifies the number as the required serial number and;

[Nonretroactive as of January 1, 1986]

(e) the serial number shall be prefaced by the words "Serial Number" or an abbreviation of that term. Abbreviations for the word "Serial" shall, as minimum, begin with the letter "S," and abbreviations for the word "Number" shall, as a minimum, begin with the letter "N" (e.g., S/N, S/N, Ser. No. and S No.).

[Nonretroactive as of January 1, 2001]

The required information shall be so located that it is readily observable without the necessity of the disassembly of a part requiring the use of any means separate from the device.

(Amended 1985 and 1991)

Discussion: At the 1999 Interim Meeting, the Committee heard discussion concerning whether or not NIST Handbook 44 is the appropriate document to list abbreviations/symbols which identify the serial number. Several manufacturers commented that NCWM Publication 14 is the appropriate place to interpret the criteria necessary to comply with G-S.1.(e) and that this was the original intent of the NTETC Sectors. A weights and measures representative pointed out that field officials use Handbook 44 as a standard field reference manual and would, therefore, have direct access to this marking information if it were in Handbook 44.

The Committee agreed that placing definitive text in Handbook 44 provides the field official with necessary information to determine compliance with marking requirements. Manufacturers' comments indicate that the original year 2000 enforcement date provides little preparation time. The Committee modified the proposal for clarity and extended the enforcement date to January 1, 2001.

Industry commented that the proposal, as written, would subject manufacturers to increased cost. The Committee notes that two terms, "Ser." and "S.No," which the Sector decided were acceptable, did not appear in the proposal. The Committee believes the terminology must be specific and not easily interpreted to represent some other alphanumeric designation; therefore, the Committee modified the proposal. When the term "Serial Number" is abbreviated, the abbreviation for the word "Serial" must, as a minimum, include the letter "S," and the abbreviation for the word "Number" must, as a minimum, include the letter "N." The use of the period is optional.

Background: Paragraph G-S.1. Identification in Handbook 44 requires that the serial number be prefaced by words, an abbreviation, or symbol that identifies the number as the required serial number. In 1998, the NTETC Measuring and Weighing Sectors discussed the need for establishing some acceptable terms that identify the serial number. This marking criteria would provide uniform guidelines for the laboratories and field enforcement officials evaluating devices and to the manufacturers designing equipment.

The Weighing Sector developed marking criteria for Digital Electronic Scales in the List of Acceptable Abbreviations/Symbols in Publication 14. Although the list is not all-inclusive, it does identify routinely acceptable abbreviations and symbols.

The Sectors noted that equipment is sometimes subject to marking requirements by multiple agencies. Sector members expressed concern about the dilemma manufacturers face when agency requirements necessitate marking similar

information on a device in multiple locations. Consequently, the Weighing Sector proposed that paragraph G-S.1. be modified to clarify which terms are acceptable to identify serial numbers. Both Sectors believe that additional work must be done to develop an all-inclusive list of abbreviations/symbols.

The Sectors heard discussion on similar definitive language which would identify the model number. The Measuring Sector agreed that language to clarify a model number designation was acceptable; however, they did not propose language. The Weighing Sector was unable to reach a consensus about the appropriate text to identify the model numbers.

310-2B 1 G-S.1. Identification; Model Number

(This item was added to the Committee's agenda as a result of discussions during the Interim Meeting.)

Source: Specifications and Tolerances Committee

Recommendation: Modify paragraph G-S.1. Identification as follows:

G-S.1. Identification. – All equipment, except weights and separate parts necessary to the measurement process but not having any metrological effect, shall be clearly and permanently marked for the purposes of identification with the following information:

(a) the name, initials, or trademark of the manufacturer or distributor;

(b) a model designation that positively identifies the pattern or design of the device; and is prefaced by the term "model."
[Nonretroactive January 1, 2001]

(c) except for equipment with no moving or electronic component parts, a nonrepetitive serial number; and
[Nonretroactive as of January 1, 1968]

(d) the serial number shall be prefaced by words , an abbreviation , or a symbol, that clearly identifies the number as the required serial number.
[Nonretroactive as of January 1, 1986]

The required information shall be so located that it is readily observable without the necessity of the disassembly of a part requiring the use of any means separate from the device.
(Amended 1985 and 1991)

Discussion: At the 1999 Interim Meeting, during discussions about agenda item 310-2A, G-S.1. Identification; Serial Number, the Committee recognized that model number identification was a separate, but equally important, issue. The Committee heard comments about the confusion over information listed on the device identification plate or tag. Field officials find identification plates marked with multiple numbers or a generic name and insufficient information to determine the manufacturer's name, and which information represents the serial and model numbers. The Committee agreed that it is appropriate to modify paragraph G-S.1. to address the identification of model numbers.

Background: Background information on this item is in Item 310-2A.

Based on industry's comments at the 1999 NCWM Annual Meeting, the Committee acknowledged other appropriate terms used internationally denote "Model," such as "type," "pattern," or "style." These alternate terms are also used in conjunction with the term "number." The Committee still recognizes the difficulty encountered by weights and measures field officials and NTEP laboratories searching for a uniform means to determine which numbers or terms correspond to a specific device design. These numbers must also agree with information listed on the Certificate of Conformance. The Committee felt that NTETC Sectors and NTEP Participating Laboratories needed additional time to review the alternative terms and, therefore, made the item informational.

310-3 D G-S.5.6.2. Multiple Recorded Representation

(This item was added to the Committee's agenda as a result of discussions of Item 354-3 during the Interim Meeting.)

Source: Specifications and Tolerance Committee

Discussion: During the review of Item 354-3, S.1.9.X. Multiple Recorded Representations, the Committee acknowledged that many devices, not just taximeters, are equipped with recording elements which are capable of printing duplicate receipts and tickets. Members of the weights and measures community cited examples of fraudulent use of duplicate receipts; these include issuing receipts with the largest delivered amount or weight to multiple customers or using receipts to falsify reimbursement claims. The Committee developed a corresponding paragraph to require all devices equipped with recording elements to identify duplicate receipts. The Committee asked that the private and public membership review the following proposal and provide feedback to the Committee.

G-S.5.6.2. Duplicate Receipts. - A recording element may produce a duplicate receipt for the previous transaction provided the information printed is identical to the original with the exception of time issued. The duplicate receipt must include the words "duplicate" or "copy."
[Nonretroactive as of January 1, 200X]

The Committee believes that the ability to print duplicate receipts is not limited to taximeters and exists in a variety of devices. To ensure that using duplicate receipts does not facilitate fraud, printers should indicate that the ticket is a "duplicate."

Because this proposal will affect all commercial devices equipped with a recording element, the Committee made this a developmental item to provide ample time for comments. The Committee is interested in receiving comments and information on the item and encourages the regional weights and measures association to study the proposal. The Committee does not plan to act on this item at the 1999 NCWM Annual Meeting.

During the 1999 Annual Meeting, one retail motor-fuel dispenser manufacturer commented that Publication 14 addresses the issue of duplicate receipts. The manufacturer noted that, if there is concern over fraudulent use of duplicate receipts in the taximeter industry, then the Committee should address only the Taximeter Code Section of Handbook 44.

The Committee believes that it may be necessary to remove this proposal from the general code and address its concerns in the specific code sections. The Committee also believes it may be appropriate to establish specific design requirements as a basis for Publication 14 criteria for duplicate receipts. All newly proposed designed requirements would supplement the existing Handbook 44 requirement in paragraph G-S.2. Facilitation of Fraud which prohibits features that facilitate fraudulent practices.

The Committee is concerned about duplicate receipts generated by liquid measuring device ticket printers such as those used in the latest vehicle tank metering system technology. The Committee believes it may not be appropriate to require the same duplicate receipt requirements for tickets which are handwritten. There is also some question about the capability of mechanical and nonintelligent printers to provide duplicate receipt information. The Committee asks for input from regional associations about problems that officials encounter when systems have the capability to issue duplicate receipts. The Committee anticipates taking action on this item after it receives feedback from the public and private sectors about the appropriateness and impact of this requirement.

320

Scales Code

320-1 VC S.1.2.2. Verification Scale Interval, S.1.2.2.1. Class I and II, and S.1.2.2.2. Class III and IIII and Table 3 Parameters for Accuracy Classes Footnote 1

(This item was adopted as part of the consent calendar.)

Source: National Type Evaluation Technical Committee Weighing Sector

Recommendation: Add new paragraphs S.1.2.2. Verification Scale Interval; S.1.2.2.1. Class I and II; and S.1.2.2.2. Class III and IIII, to read:

S.1.2.2. Verification Scale Interval

S.1.2.2.1. Class I and II. If $e \neq d$, the verification scale interval “e” shall be determined by the expression:

$$d < e \leq 10 d$$

If the displayed division (d) is less than the verification division (e) then the verification division shall be less than or equal to 10 times the displayed division.

$e = 10^k$ of the unit of measure, where k being a positive or negative whole number or zero. This requirement does not apply to a Class I device with $d < 1$ mg where $e = 1$ mg. If $e \neq d$, the value of “d” shall be a decimal submultiple of “e”, and the ratio shall not be more than 10:1. If $e \neq d$, “d” shall be differentiated from “e” by size, color, etc. throughout the range of weights displayed as “d”.

S.1.2.2.2. Class III and IIII. The value of “e” is specified by the manufacturer as marked on the device; “e” must be less than or equal to “d.”

Modify Table 3, Parameters for Accuracy Classes, Footnote as follows:

¹For Class I and II devices equipped with auxiliary reading means (i.e., a rider, a vernier, or a least significant decimal differentiated by size, shape, or color), the value of the verification scale division “e” is the value of the scale division immediately preceding the auxiliary means. ~~For Class III and IIII devices, the value of “e” is specified by the manufacturer as marked on the device; “e” must be less than or equal to “d.”~~

Discussion: A National Type Evaluation Program (NTEP) Participating Laboratory recently found difficulty in distinguishing the scale division (d) and verification scale division (e) display values on a Class II scale under evaluation. The value of “d” and “e” are addressed for Class III and IIII devices in Table 3 Parameters for Accuracy Class, Footnote 1; however, the table contains no reference to the relationship of “d” and “e” for a Class I or II scale. The value of “d” and “e” must be determined to evaluate a scale’s performance and establish tolerance values.

The Participating Laboratories noted that NIST Handbook 44 does not distinguish if “d” must be a multiple of 10e or how to display these values when the multiple is other than 10. Some instances occur where it is difficult to ascertain whether or not an indicated value was derived from “d” or “e.” For example, consider a Class II scale with a verification scale division (e) value of 0.1 g and a scale division (d) value of 0.05 g. If the display indication is 0.1 g, then confusion may arise about whether or not the display value is one e or two d. The above formula establishes the permissible limits for the values of both “d” and “e” where:

$$d < e \leq 10 d \quad \text{and} \quad e = 10^k$$

For this example $d = 0.05$ g and $e = 0.1$ g.

Thus, $d < e \leq 10 d$, is $0.05 \text{ g} < 0.1 \text{ g} \leq 0.5 \text{ g}$

The relationship of $e = 10^k$ is also satisfied because $0.1 = 10^{-1}$

The Weighing Sector reviewed this issue and proposed modifying Footnote 1 to reflect terminology from OIML R76 for Nonautomatic Weighing Instruments. R76 requirements indicate that “e” is determined by the expression $d < e \leq 10d$. R76 also determines the value of e by the equation $e = 10^k$, with k being a positive or negative whole number, or zero. The formula is consistent with OIML policy, which allows $d \neq e$ for Class I and II devices.

The Committee added text to the proposal to clarify the formula. It also added an example to the discussion (shown above) to fully explain the relationship between d and e for Class I and II scales and to ensure consistency in the description of auxiliary indications. The Committee recommends including similar examples in Examination Procedure Outlines (EPOs) and NCWM Publication 14. During the 1999 Annual Meeting, no unfavorable comments were received on this item.

320-2 I S.1.4.3.(a) Width; Scale Indicators

Source: National Type Evaluation Technical Committee Weighing Sector

Recommendation: Modify paragraph S.1.4.3.(a) to read:

S.1.4.3. Width. - The width of the index of an indicator in relation to the series of graduations with which it is used shall be not greater than:

- (a) the width of the ~~widest~~ narrowest graduation*,
 - (b) the width of the clear space between weight graduations, and
 - (c) three-fourths of the width of the clear space between money value graduations.
- *[Nonretroactive as of January 1, 2000]*

When the index of an indicator extends along the entire length of a graduation, that portion of the index of the indicator that may be brought into coincidence with the graduation shall be of the same width throughout the length of the index that coincides with the graduation.

Discussion: NIST Handbook 44 Scales Code paragraph S.1.4.3. (a) requires that the width of an indicator index be no greater than the width of the widest graduation. A similar Measurement Canada requirement requires that the width of the index be no greater than the width of the narrowest graduation. It appears that the Measurement Canada requirement may be more appropriate because it prohibits an indicator index that obscures any scale graduation. Consequently, the Weighing Sector proposes that paragraph S.1.4.3. be modified to correct the discrepancy.

The Scale Manufacturers Association supported the proposal.

During the 1999 Interim Meeting, the Committee heard no unfavorable comments on this proposal; therefore, the Committee recommended this item for a vote.

At the 1999 Annual Meeting, the Committee considered comments that the current paragraph S.1.4.3. is more appropriate because a wider index design facilitates reading of the graduation. In contrast, when the index design is narrower than the narrowest graduation, users need to read the indication to the nearest graduation. The Committee acknowledges that there is some validity to this position; however, the uncertainties associated with reading indices which obscure graduations also cause concern.

The Committee heard comments about large numbers of analog indicators still in use; however, the proposal would only apply to new devices. Measurement Canada restated it believes the proposal is a more appropriate design requirement for indicator indices than what Handbook 44 presently includes. Based on these discussions, the Committee changed the item to informational status. The Committee believes that the proposed change is more appropriate and, unless it receives more data to support the existing Handbook 44 language, the Committee will return the proposal to voting status at the 2000 Interim Meeting.

320-3 V Device Configuration for Normal Rounding or Weight Classifying Operations

(This item was adopted.)

Source: Carryover Item 320-9 (This item originated from the Northeastern Weights and Measures Association and first appeared on the Committee's agenda in 1998.)

Recommendation: Add a new paragraph S.1.8.3.1. to the Scales Code as follows:

S.1.8.3.1. Scales which will function as either a normal round off scale or as a weight classifier shall be provided with a sealable means for selecting the mode of operation and shall have a clear indication (annunciator), adjacent to the weight display on both the operator's and customer's side whenever the scale is operating as a weight classifier.
[Nonretroactive as of January 1, 2001.]

Discussion: During the 1998 NCWM Interim Meeting, the Committee considered several proposals to add a new paragraph S.1.8.3.1. to Handbook 44. The National Type Evaluation Technical Committee Weighing Sector Technical Advisors first developed the following language to address devices which function both in the normal round off and weight classifier modes.

S.1.8.3.1. Computing scales which will function as either normal round off scales or as weight classifiers shall have a clear indication (annunciator) of the mode, adjacent to the weight display on both the operator's and customer's side whenever the scale is operating as a weight classifier. [Nonretroactive as of January 1, 1999]

The Southern Weights and Measures Association reviewed the Sector's technical advisors original proposal and recommended additional text to clarify how the mode should function and to require an electronic means to seal this selectable feature.

Then the Weighing Sector modified the technical advisors original proposal as follows.

S.1.8.3.1. Scales which will function as either normal round-off scale or as weight-classifier shall be provided with a sealable electronic means for determining the mode of operation. [Nonretroactive as of January 1, 2000]

In 1998, the Committee heard from the Chairman of the Weighing Sector that the original proposal did not meet the full intent of the Sector and that Sector members are concerned about the incorrect use of these devices. A requirement for sealing the means to configure the operating mode was viewed as sufficient to prevent incorrect use of the device. Based on these comments, the Committee gave the agenda item informational status so that the requirement could be more fully developed.

During its Fall 1998 meeting, the Weighing Sector reaffirmed the need to address the issue of markings for a scale capable of functioning in both the normal round-off and weight classifier mode. The Sector believes that any marking requirement should be nonretroactive. Additionally, the feature which enables/disables the weight classifier should meet the criteria for a sealable parameter. The Sector plans to modify Publication 14 to reflect this position. The National Type Evaluation Program Participating Weighing Laboratories plan to develop a list of appropriate symbols to indicate that a device is equipped with this feature.

The Western Weights and Measures Association (WMMA) reached a consensus that it is permissible for a device in commercial use to be capable of operating in the normal rounding or weight classifier mode only when a physical seal must be broken to change modes. WMMA believes that a weight classifier should be clearly and permanently marked to eliminate any possible misuse in the marketplace.

The Northeastern Weights and Measures Association (NEWMA) reviewed the Sector's technical advisors original proposal. NEWMA believes that a physical seal must be broken to change a device from the normal rounding mode to the weight classifier mode. Additionally, NEWMA felt that the same device must be marked with the wording "Weight Classifier Mode" with an adjacent indicator light which activates when the device is in that mode.

The Central Weights and Measures Association believes that this requirement should uniformly apply to all digital electronic scales.

Based on comments received from the regional weights and measures associations and comments made at the 1999 Interim Meeting, the Committee developed the proposal shown in the recommendation above. The Committee recognized that the proposal it recommends is more restrictive. The Committee noted that devices which can be configured in both the normal rounding and weight classifier applications must have some indication of the mode of operation. A requirement for a clear indication of the mode ensures that weights and measures officials take appropriate compliance action, discourages the use of either mode in an inappropriate application, and helps to make all parties involved in the transaction aware that the feature is activated.

The Committee was currently concerned about the lack of markings on scales equipped with the normal rounding and weight classifier modes at the distribution level. Additionally, the Committee felt that a sealable feature would prevent the device from inadvertently being left in the incorrect mode. The Committee believes that both the annunciator and a seal are necessary to ensure that the operator and customer are aware of the device's mode of operation. One industry association representative noted that requiring both an annunciator and seal will force manufacturers to create separate models for each feature. The Committee agreed that the modes meet the philosophy for sealable features; however, either

a physical or electronic seal is acceptable. Therefore, the Committee did not believe it necessary to specify in the proposal the particular type of seal required to secure this feature. The Committee modified the January 1, 2000, nonretroactive enforcement date to January 1, 2001, to provide more time for manufacturers to comply with the requirement.

320-4 VC S.2.1.3. Scales Equipped with an Automatic Zero-Setting Mechanism

(This item was adopted as part of the consent calendar.)

Source: Southern Weights and Measures Association (SWMA)

Recommendation: Add a new paragraph S.2.1.3.1. to the Scales Code as follows:

S.2.1.3.1. Automatic Zero-Setting Mechanism on Class III L Devices shall be designed with a sealable means to allow the automatic zero setting to be disabled during the inspection and test of the device.
[Nonretroactive and enforceable as of January 1, 2001]

Discussion: The American Railway Engineering and Maintenance-of-Way Association (AREMA) Committee 34 recognizes that the automatic zero-setting mechanism (AZSM) enhances many weighing applications. However, AREMA also believes the inability to inactivate AZSM hinders the process to verify when a device complies with paragraph S.1.1.1. This paragraph requires a digital indication to maintain a balance or center of zero position to within tolerance. AREMA believes that AZSM has a tendency to compensate for zero drift which may be caused by malfunctioning load cells, or cable leakage, or other types of electronic instrument problems. These types of problems affect the performance of a scale over time and are undetectable unless the AZSM is disabled.

The SWMA acknowledged that Handbook 44 does not require AZSM to be disabled during testing. The SWMA heard comments that a requirement for a means to disable AZSM may not be appropriate in all scale applications, such as deli scales. Therefore, SWMA recommended that this requirement be limited to vehicle, axle-load, and railway track scales as follows:

S.2.1.3.1. Disabling of Automatic Zero Setting Mechanism. – Vehicle, railway track, and livestock scales which are equipped with an automatic zero setting mechanism means shall be designed to allow the automatic zero setting mechanism to be disabled.
[Nonretroactive as of January 1, XXXX]

The Committee considered the SWMA proposal; however, comments indicate this proposal is unclear.

The Committee reviewed an alternate proposal from the Scale Manufacturers Association (SMA) and agreed that the SMA proposal best conveyed the requirement's intent. The Committee editorially modified the proposal to reflect the original intent of the AREMA and to include the SWMA's recommendation to limit the feature to specific scale applications. The Committee also added text to the SMA proposal to indicate that disabling AZSM is intended to occur during the device test. The revised proposal is shown in the Committee's recommendation.

During the 1999 Annual Meeting, one jurisdiction expressed concern that the proposal does list applications which are exceptions to the requirement.

320-5 VC S.2.1.4. Monorail Scales, S.2.3.1. Monorail Scales Equipped with Digital
 Weighing, N.1.3.6.1. In-Motion Monorail Scales, T.N.3.8. In-Motion
 Monorail Scales; and UR.2.9. Provision for Testing In-Motion
 Weighing System Definitions for Dynamic Weighing System, and Static

(This item was adopted as part of the consent calendar.)

Source: Central Weights and Measures Association (CWMA)

Recommendation: Modify paragraphs S.2.1.4. Monorail Scales; S.2.3.1. Monorail Scales Equipped with Digital Indications; N.1.3.6.1. In-Motion Monorail Scales; T.N.3.8. In-Motion Weighing, Monorail Scales; and UR.2.9. Provision for Testing In-Motion Monorail Scales to read as follows:

S.2.1.4. Monorail Scales. - On a static monorail scale equipped with digital indications, means shall be provided for setting the zero-load balance to within 0.02 percent of scale capacity. ~~On an in-motion system~~ dynamic monorail scale, means shall be provided to automatically maintain these conditions.

S.2.3.1. Monorail Scales Equipped with Digital Indications. - On a static monorail scale equipped with digital indications, means shall be provided for setting any tare value of less than 5 percent of the scale capacity to within 0.02 percent of scale capacity. ~~On an in-motion system~~ dynamic monorail scale, means shall be provided to automatically maintain this condition.

N.1.3.6.1. In-Motion Dynamic Monorail Scales.- Dynamic Tests with Livestock Carcasses: The dynamic test should be conducted to duplicate actual use conditions. No less than 20 carcasses of the type normally weighed should be used in the dynamic test; two additional carcasses may be included in the test run for use in the event that one or two carcasses are rendered unusable during the dynamic test. Prior to starting the dynamic test, the test carcasses must be positioned far enough ahead of the scale so that their swaying motion settles to duplicate the normal sway of a continuously running plant chain. If the plant conveyor chain does not space or prevent the carcasses from touching one another, dynamic tests should not be conducted until this condition has been corrected.

(Added 1996)

All carcasses shall be individually weighed statically (~~after an accurate static test with test weights~~) on either the same scale being tested dynamically or another monorail scale with the same or smaller divisions and in close proximity. The scale selected for weighing the carcasses shall first be tested statically with test weights. If multiple dynamic tests are conducted using the same carcasses, static weights should be obtained before and after the multiple dynamic tests. If a carcass changes weight between static tests, the amount of the weight change should be taken into account or the carcass should be disregarded for tolerance purposes. It is preferable to use the gross weight of the carcass and trolley for the dynamic test.

Note: For a dynamic monorail test, the reference scale shall comply with the principles in the Fundamental Considerations paragraph 3.2 Tolerances for Standards.

T.N.3.8. In-Motion Dynamic Weighing, Monorail Scales. - On an ~~in-motion~~ dynamic test of 20 or more individual test loads, 10 percent of the individual test loads may be in error, each not to exceed two times the static tolerance applicable. The error on the total of the individual test loads shall not exceed ± 0.2 percent.

(Added 1986) (Amended 1999)

UR.2.9. Provision for Testing In-Motion Dynamic Monorail Scales. - Provisions shall be made at the time of installation of an ~~in-motion~~ dynamic monorail scale for testing in accordance with N.1.3.6.1. (a rail around or other means for returning the test carcasses to the scale being tested).

[Nonretroactive as of January 1, 1998]

(Added 1997)

Add new definitions for Dynamic Weighing System and Static Weighing System to Handbook 44 Appendix D as follows:

Dynamic Monorail Weighing System, - A weighing system which employs hardware or software to compensate for dynamic effects from the load or the system that do not exist in a static weighing, in order to provide a stable indication. Dynamic factors may include

shock or impact loading, system vibrations, oscillations, etc. and can occur even when the load is not moving across the load receiving element. [2.20]

Static Monorail Weighing System. A weighing system in which the load being applied is stationary during the weighing operation. [2.20]

Discussion: CWMA believes that changing terminology from “in-motion” to “dynamic” better reflects the types of weighing systems used in monorail applications. CWMA proposed terminology to clarify the differences between static and dynamic installations for type evaluation and field enforcement purposes. These terms also correspond to proposed new definitions for NIST Handbook 44.

Based on definitions contained in the Scale Manufacturers Association publication “Terms and Definitions for the Weighing Industry,” CWMA proposed two new definitions to Handbook 44. CWMA noted that the devices to which Handbook 44 refers to as “in-motion monorail” are actually dynamic devices. Loads sway in such a manner that the weighing system does not come to rest. These systems compensate for the dynamic factors through the use of algorithms. CWMA notes that, in contrast to a dynamic system, an in-motion weighing system is able to come to rest during the weightment and function similar to a static scale.

CWMA agreed that there are modifications being made to monorails which were originally type evaluated as static scales. According to the proposed definitions, scales modified in this way are more accurately described as dynamic systems. CWMA believes the proposed definitions will provide clear guidelines about how to interpret NTEP criteria during a device’s re-evaluation.

The Southern Weights and Measures Association (SWMA) recommended further development of this issue and expressed concern that this proposal may affect the requirements for devices other than monorail scales. The SWMA believes that definitions are needed, but recommends that the definition of dynamic weighing systems be refined and expanded to cover in-motion weighing systems rather than creating a separate definition for in-motion weighing systems.

During the 1999 Interim Meeting, the S&T Committee saw a packing plant operation video. The video illustrated the effects of random influence factors (swaying, blood and tissue loss, mechanical switches, etc.) on the weighing process. The Committee heard industry’s numerous comments about the importance of using the appropriate terminology to describe the forces affecting the weightment of carcasses on beef plant monorail scales. Industry members expressed additional concern about the inappropriate use of the term “in-motion” which applies more to railway track scale applications. The term “dynamic monorail scale” distinguishes between dynamic and static monorail scales. The term also better describes the weightment operation and, therefore, allows a correct assessment of which tolerances apply. The Committee believes its modifications to the CWMA’s proposal help to avoid any conflict with in-motion railway track scale and the requirements in Handbook 44. The Committee felt it should revisit this item when the NCWM implements a plan to revise Handbook 44 or see if these requirements should be included in the Automatic Weighing System Code when the code becomes permanent.

During the 1999 Annual Meeting, the Committee received a comment that there may be confusion about the appropriate tolerances for the reference scale. Therefore, a new note section was added to paragraph N.1.3.6.1. to clarify the accuracy requirement for the reference scale. The Committee also modified the definitions for “dynamic monorail weighing system” and “static monorail weighing system” to clarify the type of system the requirements address. The Committee believes that error weights and expanded resolution are also important tools to use to increase the confidence in the reference scale indicated values.

320-6 VC Table S.6.3.b. Notes For Table S.6.3.a.; Temperature Limits

(This item was adopted as part of the consent calendar.)

Source: National Type Evaluation Technical Committee Weighing Sector

Recommendation: Modify Table S.6.3.b. Notes For Table S.6.3.a., Note 5. to read as follows:

5. **Required only on Class III, III L, and III seales devices if the temperature range on the NTEP CC is other narrower than and within -10 °C to 40 °C (14 °F to 104 °F).**
[Nonretroactive as of January 1, 1986]

Discussion: The Weighing Sector identified a discrepancy between Handbook 44 and Publication 14 National Type Evaluation Program Administrative Procedures, Technical Policy, Checklists, and Test Procedures in the requirement for marking temperature ranges on scales. Handbook 44 requires that Class III, III L, and IIII devices be marked with a temperature range if the temperature limits are other than $-10\text{ }^{\circ}\text{C}$ to $+40\text{ }^{\circ}\text{C}$. However, some sections of Publication 14 state that these devices must be marked with a temperature range if the temperature range is narrower than $-10\text{ }^{\circ}\text{C}$ to $+40\text{ }^{\circ}\text{C}$.

The Weighing Sector discussed instances where it is permissible to use a device if the device is marked with a specific temperature range, or a range is listed on a CC. The Sector agreed that, if possible, the requirement should harmonize with OIML. OIML R76 Clause 3.9.2.1. Prescribed Temperature Limits states “If no particular working temperature is stated in the descriptive markings of an instrument, this instrument shall maintain its metrological properties within the following temperature limits: $-10\text{ }^{\circ}\text{C}$, $+40\text{ }^{\circ}\text{C}$.”

The Committee agreed that although the modifications to Note 5 are less restrictive, they appear to more adequately describe the temperature marking requirements and eliminate any conflict between Handbook 44 and Publication 14.

During the 1999 Annual Meeting, there were no unfavorable comments on this item.

320-7 VC Table S.6.3.b. Notes For Table S.6.3.a.; “S” or “M”

(This item was adopted as part of the consent calendar.)

Source: National Type Evaluation Technical Committee Weighing Sector

Recommendation: Modify Note 7. of Table S.6.3.b. Notes For Table S.6.3.a., to read as follows:

7. ***Denotes compliance for single or multiple load cell applications. It is acceptable to use a load cell with the “S” or “Single” Cell designation in multiple load cell applications as long as all other parameters meet applicable requirements. A load cell with the “M” or “Multiple” Cell designation can be used only in multiple load cell applications. [Nonretroactive as of January 1, 1988]***

Add the following definitions to Handbook 44:

Single Cell Application Load Cell. – A load cell intended for use in a weighing system which incorporates one or more load cells. A single cell application load cell is designated with the letter “S” or the term “Single.” (See also Multiple Cell Application Load Cell)

Multiple Cell Application Load Cell. – A load cell intended for use in a weighing system which incorporates more than one load cell. A multiple cell application load cell is designated with the letter “M” or the term “Multiple.” (See also Single Cell Application Load Cell)

Discussion: Table S.6.3.a. Marking Requirements require load cells to be marked “S” or “M” to indicate compliance with the criteria for single or multiple load cell applications, respectively. NTEP evaluates load cells used in single cell applications to more stringent tolerances than those applied to cells intended for use in multiple cell applications. Based on this policy, Certificates of Conformance issued for load cells which meet the performance requirements for single cell applications state that the cells can be used in single or multiple cell applications without additional testing. Currently, no language in Handbook 44 recognizes this policy.

CWMA and NEWMA reviewed a draft definition for a single load cell application in advance of the Sector’s changes proposed to Footnote 7 recommended above. Both regions believe that this new language should be added to NIST Handbook 44.

The Southern Weights and Measures Association (SWMA) considered the draft definition for a single load cell application and the recommendation to modify Table S.6.3.a. SWMA agreed that the proposed changes to Footnote 7 helps clarify the marking criteria.

Comments at the 1999 Interim Meeting indicated that a definition for both single cell and multiple cell applications should be included in Handbook 44. Therefore, the Committee developed two new definitions to describe single and

multiple cell applications and further modified the Sector's proposal to change Note 7 to recognize all possible designations for "multiple cell" and "single cell" applications.

During the 1999 Annual Meeting, there were no unfavorable comments on this item.

320-8 V Table S.6.3.a. Marking Requirements and Table S.6.3.b. Notes For Table S.6.3.a.; Nominal Capacity, Concentrated Load Capacity, and Section Capacity

(This item was adopted.)

Source: National Type Evaluation Technical Committee Weighing Sector

Recommendation: Add a new footnote to Table S.6.3.b. Notes For Table S.6.3.a. as follows:

20. Combination vehicle/railway track scales must be marked with both the nominal capacity and CLC for vehicle weighing and the nominal capacity and section capacity for railway weighing. All other requirements relating to these markings will apply. [Nonretroactive as of January 1, 2000.]

Modify the entries for "Concentrated Load Capacity" and "Section Capacity" in Table S.6.3.a. Marking Requirements as follows to reflect the addition of the proposed footnote:

Table S.6.3.a. Marking Requirements

| To Be Marked With | Weighing Equipment | Weighing, load-receiving, and indicating element in same housing | Indicating element not permanently attached to weighing and load-receiving element | Weighing and load-receiving element not permanently attached to indicating element | Load cell with CC (11) | Other equipment or device (10) |
|--|--------------------|--|--|--|------------------------|--------------------------------|
| ... | | | | | | |
| Concentrated Load Capacity (CLC) (12) (20) | | | x | x (9) | | |
| ... | | | | | | |
| Section Capacity(14) (20) | | | x | x | | |

For applicable notes, see Table S.6.3.b. (Added 1990) (Amended 1992)

Modify paragraph S.6.1. Nominal Capacity; Vehicle, Axle-Load, and Livestock Scales. as follows:

S.6.1. Nominal Capacity; Vehicle, Axle-Load, and Livestock Scales. - For all vehicle, axle-load, and livestock scales, the marked nominal capacity shall not exceed the concentrated load capacity (CLC) times the quantity of the number of sections in the scale minus 0.5. As a formula, this is stated as:

$$\text{nominal capacity} \leq \text{CLC} \times (N - 0.5)$$

where N = the number of sections in the scale.

(See N.1.3.4. and T.N.3.1.)

[Nonretroactive as of January 1, 1989.]

Note: When the device is used in a combination railway track and vehicle weighing application, the above formula shall apply only to the vehicle scale application.
(Added 1988)

Discussion: The Weighing Sector discussed scales such as those which are used in combination vehicle/railway track applications, and how these devices must meet Handbook 44 Concentrated Load Capacity (CLC) and section capacity requirements. The vehicle/railway track combination scales must satisfy paragraph S.6.1. Nominal Capacity; Vehicle, Axle-load, and Livestock Scales; however, the railway track nominal capacity may be so large that the device is unable to meet the CLC rating in the formula. For example consider a combination vehicle/railway weighing application with four sections and rated by the manufacturer as follows:

| | | | |
|-------------------------|--------------------|-------------------------------|--------------------|
| Vehicle Scale Capacity: | 120 000 lb x 20 lb | Railway Track Scale Capacity: | 400 000 lb x 50 lb |
| CLC | 80 000 lb | Section Capacity | 360 000 lb |

For this example, railway track application does not satisfy the formula:
nominal capacity \leq CLC x (N - 0.5) because 400 000 lb > 80 000 lb x (4 - 0.5)

Based on these discussions, the Sector recommended: 1) requiring two separate nominal capacity markings; 2) requiring the device to be marked with both CLC and section capacity; and 3) specifying that the formula in paragraph S.6.1. is applicable only to the vehicle scale applications.

The Committee added additional text to paragraph S.6.1. to clarify that the nominal capacity formula applies only to vehicle scale applications when devices are used in combination railway track/vehicle scale applications. The Committee heard no unfavorable comments on the original proposal; therefore, the Committee recommended that modifications also be made to Table S.6.3.a.

320-9 V N.1.3.6.1. In-Motion Monorail Scales

(This item was adopted.)

Source: Central Weights and Measures Association (CWMA)

Recommendation: Amend paragraph N.1.3.6.1. In-Motion Monorail Scales as follows:

N.1.3.6.1. In-Motion Monorail Scales. - Dynamic tests with livestock carcasses: The dynamic test should be conducted to duplicate actual use conditions. No less than 20 test loads using carcasses or portions of carcasses of the type normally weighed should be used in the dynamic test; two additional ~~carcasses~~ test loads may be included in the test run for use in the event that one or two ~~carcasses~~ test loads are rendered unusable during the dynamic test. Prior to starting the dynamic test, the test carcasses must be positioned far enough ahead of the scale so that their swaying motion settles to duplicate the normal sway of a continuously running plant chain. If the plant conveyer chain does not space or prevent the carcasses from touching one another, dynamic tests should not be conducted until this condition has been corrected.

All carcasses shall be individually weighed statically (after an accurate static test with test weights) on either the same scale being tested dynamically or another monorail scale with the same or smaller divisions and in close proximity. If the scale being tested is used for weighing freshly slaughtered animals, (often referred to as a "hot scale."), care must be taken to get a static weightment as quickly as possible before or following the dynamic weightment to avoid loss due to shrink. If multiple dynamic tests are conducted using the same carcasses, static weightings should be obtained before and after multiple dynamic tests. If the carcass changes weight between static tests, the amount of weight change should be taken into account, or the carcass should be disregarded for tolerance purposes. ~~It is preferable to use the gross weight of the carcass and the trolley for dynamic tests.~~
(Added 1996)

Discussion: The CWMA believes the proposed changes will correct numerous concerns about the application of paragraph N.1.3.6.1. The first concern relates to the use of the term “carcass,” which industry normally uses to refer to the whole animal. The proposal clarifies the original intent of the procedure, which is to achieve 20 weighments rather than weighing 20 carcasses. In a beef plant, if Handbook 44 terminology is applied, then 20 carcasses would typically involve 40 weighments because each “carcass” includes two sides of beef. The second concern is that these dynamic scales are being installed as “hot” scales, which means that they are being used to weigh freshly slaughtered, still dripping carcasses. The proposal would eliminate some of the uncertainty introduced through shrinkage because it encourages a rapid method of obtaining the static weighment. The third concern is that the weight of the trolley in beef plants is preprogrammed as tare, using an average tare weight. This practice makes it impossible to use gross weight under normal operating conditions; therefore, it is preferable to use the static scale in a net mode in which the same tare as for the dynamic scale is deducted.

CWMA believes the proposed modifications to paragraph N.1.3.6.1. more accurately describe the required testing for dynamic monorails in packing plants under normal operating conditions when carcasses are used for test loads.

The Southern Weights and Measures Association recommended further developing this issue and expresses concern that this proposal may affect the requirements for devices other than monorail scales.

During the 1999 Interim Meeting, the U.S. Department of Agriculture Grain Inspection Packers and Stockyard Administration (GIPSA) and several manufacturers supported for the proposal. The Committee agreed that the proposed modifications to paragraph N.1.3.6.1. align Handbook 44 terminology with industry’s terminology and lessens the confusion about the test procedure.

320-10 W N.2.1. Verification Interval

(This item was withdrawn.)

Source: Carryover Item 320-6 (This item originated from the Southern Weights and Measures Association and first appeared on the Committee’s agenda in 1998.)

Discussion: The Committee considered a proposal to add the following new paragraph N.2.1. Verification Interval to the Scales Code. The proposal was intended to provide guidelines on the appropriate frequency to verify test standards.

N.2.1. Verification Interval. - Where approved test weights remain in one location, are only moved during testing of the scale, and are protected from physical abuse or exposure to corrosive elements, the calibration interval could be extended beyond the normal one- year or two-year period. The time period for resealing or recertification of these weights may, at the discretion of the official with statutory authority, be extended for a period not to exceed ten (10) years. However, should the test weights be removed from the location for any reason, except when authorized by the official with statutory authority, all test weights shall be recertified prior to placing them in service.

During the Southern Weights and Measures Association (SWMA) 1997 Annual Meeting, the SWMA noted that the NCWM has not formally addressed calibration intervals for field standards. Traditionally, the state metrology laboratory is the authority that establishes the cycle for recalibration of field standards. Several weights and measures jurisdictions have incorporated requirements for the frequency of recalibration of field standards as part of their laws and regulations. The SWMA notes that most jurisdictions have established a one-year calibration interval for Class F field standards. The interval may vary because some are based on historical analysis of data on the “as found” condition of the standards.

Based on comments heard during the 1998 Interim and Annual Meetings, the Committee recommended several modifications to the SWMA’s proposal for a new paragraph N.2.1. Verification Interval as outlined in the recommendation above. The modifications clarify the maximum permissible calibration interval, the test weight location, and the responsibilities of the official with statutory authority.

The Committee acknowledged that the proposal was prompted by the need to address the extensive, burdensome, and often unwarranted procedures required to verify hopper scale standards. The Scale Manufacturers Association (SMA) indicated that it could support this requirement only if the requirement applies solely to hopper scale standards. The Committee expressed concern that NIST Handbook 44 does not contain verification intervals for other standards and that the proposal may later conflict with requirements that the Metrology Subcommittee is developing. Consequently, the Committee decided to maintain the item as an information item to allow time for additional development of the issue. In

the meantime, the Committee believes the metrologist or official with authority in each jurisdiction should determine the required verification intervals.

At its 1998 meeting, the Western Weights and Measures Association (WWMA) recommended that the item maintain its informational status until the Metrology Subcommittee completes its work. The WWMA believes this issue might be better addressed in Handbook 145, Handbook for the Quality Assurance of Metrological Measurements. The WWMA recommended the language in the proposal be modified to state that the calibration interval “*may* be extended beyond the normal one-year or two-year period” instead of “*could* be extended.”

At its 1998 Annual Meeting, the Northeastern Weights and Measures Association (NEWMA) indicated that requirements for certification intervals are better addressed in NIST Handbook 130, Uniform Weights and Measures Law, 3. Physical Standards. NEWMA understands that the Metrology Subcommittee is updating the Handbook 105 Series to address the issue of certification intervals. NEWMA believes the NCWM should consider the language developed by the Metrology Subcommittee.

During its 1998 Annual Meeting, SWMA also recognized the Metrology Subcommittee’s work to develop a 105 Series Handbook which addresses calibration intervals for field standards. The SWMA believes that Handbook 105 is a more appropriate document to provide guidance on calibration intervals.

The Central Weights and Measures Association (CWMA) also believes NIST Handbook 105 is the place to address this issue. CWMA believes the proposal provides no greater authority to weights and measures officials than already exists. Therefore, CWMA recommended this proposal be withdrawn from the NCWM S&T agenda.

The Committee considered recommendations to include a reference to the 105 Series in the Fundamental Considerations, because the Committee is concerned that Handbook 44 does not refer to the 105 Series.

The Metrology Subcommittee gave the Committee a draft NIST Handbook 105-8, Specifications and Tolerances for Reference Standards and Field Standard Weights and Measures Recommended Calibration Intervals, to review. The Committee encouraged the Metrology Subcommittee to complete Handbook 105-8 and will provide comments to the Subcommittee on that draft. The Metrology Subcommittee plans to determine guidelines based on analytical and other data gathered this year. The Committee believes that Handbook 105-8 is a more appropriate document than Handbook 44 in which to place the verification intervals for test standards. Consequently, the Committee decided to withdraw this item from its agenda.

Additional background information on this issue can be found in the Committee’s 1998 final report.

320-11 VC T.N.3.8. In-Motion Weighing, Monorail Scales

(This item was adopted as part of the consent calendar.)

Source: Central Weights and Measures Association (CWMA)

Recommendation: Modify paragraph T.N.3.8 In-Motion Weighing Monorail Scales as follows:

T.N.3.8. In-Motion Weighing, Monorail Scales - Acceptance tolerance shall be the same as the maintenance tolerance shown in Table 6. On an in-motion test of 20 or more individual test loads, 10 percent of the individual test loads may be in error, each not to exceed two times the static tolerance applicable. The error on the total of the individual test loads shall not exceed ± 0.2 percent. (Note: See also Note in N.1.3.6.1.)
(Added 1986)

Discussion: Nebraska Weights and Measures provided data to the CWMA to demonstrate the differences between in-motion monorail scale performance when known test weights were used under controlled conditions and scale performance when carcasses were used under actual use conditions. When the test loads were fresh carcasses, CWMA has found that even devices just placed into service and operating under ideal test conditions cannot attain acceptance tolerance. CWMA believes that devices held to existing Handbook 44 tolerances are set more frequently to zero error. CWMA believes these same devices are capable of meeting the proposed tolerances without a need for a constant change to zero which ultimately affects the device tolerances.

CWMA believes that officials need the ability to test in-motion scales in actual use conditions; this can only be done using carcasses. Although devices can meet acceptance tolerances when known weights are used, the devices are unable to meet tolerances when carcasses are used. CWMA believes the proposed tolerances allow inspectors to test a device during actual production and apply reasonable and attainable tolerances. The proposal eliminates the need to conduct inspections after normal business hours, between shifts, or during short breaks under inappropriate conditions.

The Southern Weights and Measures Association recommended developing this issue further and expresses concern that this proposal may affect the requirements for devices other than monorail scales.

At the 1999 Interim Meeting, the Committee heard comments to modify the text to more accurately reflect the affects of specific forces on the weighing operation. The Committee acknowledges SWMA's concerns about similar changes to the tolerances for other devices; however, the Committee believes that dynamic monorail scales operate in a unique environment. The Committee believes that maintenance tolerance is appropriate for processing plant monorail scales because of the uncertainties that affect the accuracy of the weighments with freshly slaughtered carcasses.

During the 1999 Annual Meeting, a note was added to paragraph T.N.3.8. to refer to the Note in paragraph N.1.3.6.1. (Item 320-5) to clarify the required accuracy for the reference scale.

320-12 VC UR.1.3. Value of Indicated and Recorded Scale Division, UR. 3.10. Dynamic Monorail Scales, S.1.2.2. Verification Scale Interval, and S.1.2.2.2. Class III and IIII

(This item was adopted as part of the consent calendar.)

Source: Central Weights and Measures Association (CWMA)

Recommendation: Modify paragraph UR.1.3. Value of Indicated and Recorded Scale Division to read as follows:

UR.1.3. Value of the Indicated and Recorded Scale Division. —~~Except for Class I scales, t~~ The value of the division as recorded shall be the same as the division value indicated.

UR.1.3.1. Exceptions. — The provisions of UR.1.3. Value of the Indicated and Recorded Scale Division shall not apply to:

(a) Class I scales, or

(b) Dynamic monorail scales when the value of d is less than the value of e.
[Nonretroactive as of January 1, 1986]
(Added 1985)

Add a new paragraph UR.3.10. to read as follows:

UR.3.10. Dynamic Monorail Scales. — When the value of d is different from the value of e, the commercial transaction must be based on e.

Add new paragraphs S.1.2.2.1. and S.1.2.2.2. to read as follows:

S.1.2.2.1. Class I and II Scales and Dynamic Monorail Scales. If $e \neq d$, the verification scale interval "e" shall be determined by the expression:

$$d < e \leq 10 d$$

If the displayed division (d) is less than the verification division (e) then the verification division shall be less than or equal to 10 times the displayed division.

$e = 10^k$ of the unit of measure, where k being a positive or negative whole number or zero. This requirement does not apply to a Class I device with $d < 1$ mg where $e = 1$ mg. If $e \neq d$, the value of "d" shall be a decimal submultiple of "e", and the ratio shall not be more than 10:1. If $e \neq d$, and both "e" and "d" are continuously displayed during normal operation

then “d” shall be differentiated from “e” by size, color, etc. throughout the range of weights displayed as “d”.

S.1.2.2.2. Class III and IIII. The value of “e” is specified by the manufacturer as marked on the device. Except for dynamic monorail scales, “e” must be less than or equal to “d.”

Discussion: Initially, the Committee reviewed the proposal below to modify paragraph UR.1.3. Based on comments from weights and measures officials and manufacturers during the open session, the Committee believes that once the Automatic Weighing Systems (AWS) Code reaches full status, it may be appropriate to revisit this issue to examine monorail scale requirements as part of the AWS Code.

UR.1.3. Value of Indicated and Recorded Scale Division. - ~~Except for Class I scales, For scales used in direct sale applications, the value of the division, as recorded, shall be the same as the division value indicated. [Nonretroactive as of January 1, 1986.]~~

The CWMA recommended modifying paragraph UR.1.3. to allow for expanded resolution on devices not used in direct sale applications. CWMA felt that expanded resolution provides scale users with a tool to improve internal control of their processes. CWMA believed there is no need to be concerned about customer confusion because the customer is not present to observe the difference between the expanded resolution display and the printed value for the weighing system. CWMA also believed that expanded resolution can enhance official device testing where error weights are difficult to use due to the influence factors at the test site.

The Southern Weights and Measures Association questions if it is possible to prevent the routine use of extra digits on devices that are permitted to display additional digits for testing purposes.

The Committee noted that NIST Handbook 44 does not prohibit expanded resolution during the device test. The Committee recognized that Handbook 44 presently requires a security seal or audit trail to prevent unauthorized use of expanded resolution between official inspections.

The Committee felt weights and measures officials may be confused about which value on the display represents “e” during an inspection since the original proposal did not make this distinction. This may result in failure of a device to comply because too stringent tolerances were applied during the test. To address this concern, the Committee proposed new paragraphs S.1.2.2.1. and S.1.2.2.2. which require that the values of “e” and “d” are distinguishable when $e \neq d$. Proposed paragraphs S.1.2.2.1. and S.1.2.2.2. are similar to text proposed in Item 320-1. However, paragraph S.1.2.2.2., as noted above, provides a needed exception to the required value for “e” in relationship to “d” by permitting dynamic monorail scales to have an “e” value which is greater than or equal to “d.” The Committee had additional concerns because, based on current Handbook 44 interpretation, the expanded resolution mode is a sealable feature. However, it appears that devices may now toggle between the expanded resolution mode and “normal” mode; therefore, they will be used in the expanded resolution mode. The modified proposal would ensure the appropriate value for “e” and “d” for such devices is apparent.

The Committee acknowledges that the current design of some monorail scale installations makes them unable to input transaction information when they are placed in the expanded resolution mode. The Committee believes it is acceptable to use the expanded resolution feature for internal inventory and test purposes; however, this mode should not interfere with the mathematical agreement between indications for sales transactions. Currently, when the display value is set for expanded resolution, the printed receipt shows a lower resolution. The Committee believes that technology to allow agreement of indications may be available to satisfy industry’s need to have normal and expanded resolution indications during regular business operation. During the 1999 Annual Meeting, there were no unfavorable comments on this item.

320-13 VC Table UR.3.2.1. Span Maximum Load

(This item was adopted as part of the consent calendar.)

Source: Southern Weights and Measures Association

Recommendation: Amend Table UR.3.2.1. Span Maximum Load as follows to: (1) expand the reference values of the CLC to Maximum Load (“r” factor) for vehicles with greater than 4 axles and distances between two or more consecutive axles up to 20 feet; and (2) revise some existing values to reflect consistently rounded numbers.

| Table UR.3.2.1. Span Maximum Load | | | | | | | | |
|---|---|-----------|-------------------------|---|------------|-----------|----------|------------|
| Distance in feet between the extremes of any group of 2 or more consecutive axles | Ratio of CLC to maximum load ("r" factor) carried on any group of 2 or more consecutive axles | | | | | | | |
| | 2 axles | 3 axles | 4 axles | 5 axles | 6 axles | 7 axles | 8 axles | 9 axles |
| 4' | 1.000 | | | | | | | |
| 5' | 1.000 | | | INSTRUCTIONS: 1. Determine the scale's CLC 2. Count the number of axles on the vehicle in a given span and determine the distance in feet between the first and last axle in the span. 3. Multiply the CLC by the corresponding multiplier in the scale.* 4. The resulting number is the scale's minimum concentrated load for a single span based on the vehicle configuration. *See note and formula below. | | | | |
| 6' | 1.000 | | | | | | | |
| 7' | 1.000 | | | | | | | |
| 8 and less ¹ | 1.000 | 1.000 | | | 1.853 | | | |
| More than 8' | 1.118 | 1.235 | | | 1.871 | | | |
| 9 | 1.147 | 1.2507 | | | 1.7244 | | | |
| 10 | 1.176 | 1.279 | | | 1.888 | | | |
| 11 | 1.206 | 1.294 301 | | | 1.906 | | | |
| 12 | 1.235 | 1.324 | 1.471 | 1.632 | | | | |
| 13 | 1.265 | 1.34846 | 1.48890 | 1.651 | | | | |
| 14 | 1.294 | 1.368 | 1.5160 | 1.669 | | | | |
| 15 | 1.324 | 1.383 90 | 1.539 | 1.688 | 1.853 | | | |
| 16 | 1.353 | 1.412 | 1.5449 | 1.706 | 1.871 | | | |
| 17 | 1.382 | 1.43634 | 1.57469 | 1.7244 | 1.888 | | | |
| 18 | 1.412 | 1.456 | 1.588 | 1.7435 | 1.906 | | | |
| 19 | 1.441 | 1.4748 | 1.6088 | 1.7651 | 1.924 | | | |
| 20 | 1.471 | 1.500 | 1.6327 | 1.779 | 1.941 | | | |
| 21 | 1.500 | 1.51522 | 1.647 | 1.79 4.8 | 1.9569 | | | |
| 22 | 1.529 | 1.544 | 1.6627 | 1.80916 | 1.9576 | | | |
| 23 | 1.59 | 1.58966 | 1.69486 | 1.8385 | 2.0001 994 | | | |
| 24 | 1.588 | 1.588 | 1.706 | 1.853 | 2.0152 | 2.176 | | |
| 25 | 1.618 | 1.6103 | 1.7245 | 1.86871 | 2.029 | 2.1944 | | |
| 26 | | 1.632 | 1.7450 | 1.88290 | 2.0447 | 2.20611 | | |
| 27 | | 1.6542 | 1.765 | 1.94208 | 2.056 95 | 2.2248 | | |
| 28 | | 1.676 | 1.77984 | 1.9276 | 2.0882 | 2.2450 | 2.412 | |
| 29 | | 1.6949 | 1.8094 | 1.9445 | 2.1030 | 2.26 5 2 | 2.4269 | |
| 30 | | 1.721 | 1.824 | 1.9 563 | 2.118 | 2.279 | 2.4445 | |
| 31 | | 1.7435 | 1.8438 | 1.9852 | 2.1325 | 2.2947 | 2.4562 | |
| 32 | | 1.765 | 1.8683 | 2.000 | 2.14753 | 2.30914 | 2.48579 | 2.647 |
| 33 | | | 1.882 | 2.0158 | 2.1761 | 2.3 24 31 | 2.500496 | 2.6624 |
| 34 | | | 1.897902 | 2.02937 | 2.19188 | 2.3 53 48 | 2.5153 | 2.67680 |
| 35 | | | 1.9262 | 2.0595 | 2.206 | 2.36 8 5 | 2.529 | 2.6947 |
| 36 | | | 1.9442 000 ² | 2.074 | 2.2244 | 2.382 | 2.5446 | 2.70613 |
| 37 | | | 1.9562 000 ² | 2.08892 | 2.23541 | 2.397400 | 2.55963 | 2.7350 |
| 38 | | | 1.9685 2 000 | 2.10310 | 2.2659 | 2.4127 | 2.57480 | 2.75046 |
| 39 | | | 2.000 | 2.13229 | 2.2796 | 2.42734 | 2.603597 | 2.7653 |
| 40 | | | 2.04520 | 2.147 | 2.294 | 2.4561 | 2.6183 | 2.779 |
| 41 | | | 2.04439 | 2.1625 | 2.30912 | 2.47468 | 2.6320 | 2.7946 |
| 42 | | | 2.059 | 2.17684 | 2.3249 | 2.485 | 2.647 | 2.80913 |
| 43 | | | 2.0748 | 2.2062 | 2.35347 | 2.5092 | 2.6624 | 2.8249 |
| 44 | | | 2.4 0983 | 2.221 | 2.3685 | 2.51520 | 2.67481 | 2.83946 |
| 45 | | | 2.118 | 2.2369 | 2.382 | 2.52937 | 2.6947 | 2.8662 |
| 46 | | | 2.1327 | 2.2507 | 2.402400 | 2.5594 | 2.72114 | 2.88279 |
| 47 | | | 2.16257 | 2.2796 | 2.4128 | 2.5741 | 2.7351 | 2.8975 |
| 48 | | | 2.176 | 2.294 | 2.44435 | 2.588 | 2.75048 | 2.912 |
| 49 | | | 2.1946 | 2.30913 | 2.4563 | 2.6035 | 2.765 | 2.9268 |
| 50 | | | 2.2316 | 2.32431 | 2.471 | 2.61823 | 2.77982 | 2.9445 |
| 51 | | | 2.235 | 2.35349 | 2.4858 | 2.63240 | 2.7948 | 2.9561 |
| 52 | | | 2.25 05 | 2.368 | 2.5006 | 2.66257 | 2.80915 | 2.9738 |
| 53 | | | 2.2795 | 2.3826 | 2.5294 | 2.6764 | 2.8382 | 3.0002 994 |
| 54 | | | 2.294 | 2.397404 | 2.5441 | 2.691 | 2.85349 | 3.0151 |
| 55 | | | 2.30914 | 2.4263 | 2.559 | 2.7068 | 2.8686 | 3.0298 |
| 56 | | | 2.3383 | 2.441 | 2.5746 | 2.7245 | 2.882 | 3.044 |
| 57 | | | 2.353 ³ | 2.4 560 | 2.5 8894 | 2.73542 | 2.8979 | 3.05961 |
| 58 | | | | 2.4748 | 2.6182 | 2.7650 | 2.9126 | 3.0747 |
| 59 | | | | | 2.6029 | 2.7797 | 2.93633 | 3.08894 |
| 60 | | | | | 2.515 | 2.647 | 2.794 | 2.9560 |

*Note: This table was developed based upon the following formula. Values may be rounded in some cases for ease of use.

$$W = r \times 500 \left[\left(\frac{LN}{N-1} \right) + 12N + 36 \right]$$

1 Tandem Axle Weight

2 Exception – These values in the third column correspond to the maximum loads in which the inner bridge dimensions of 36, 37, and 38 feet are considered to be equivalent to 39 feet. This allows a weight of 68 000 lb on axles 2 through 5.

3 Corresponds to the Interstate Gross Weight Limit.

Discussion: In 1996, Table UR.3.2.1. was added to NIST Handbook 44 to provide a reference table of values and a formula for calculating the maximum load of a vehicle scale which did not exceed the maximum load capacity of the scale's span. The Southern Weights and Measures Association recommended that the range of scale sizes in Table UR.3.2.1. be expanded to better reflect devices in use today. The proposal also includes modifications to existing values in Table UR.3.2.1. to reflect consistently rounded values.

The Scale Manufacturers Association supported the proposal.

The Committee agreed to modify Table UR.3.2.1 to cover additional vehicle applications and to correct inconsistencies in rounding. The Committee recommended adding new values, as outlined in the above table, for the permissible ratio of CLC to maximum load carried by vehicles with two consecutive axles when the distances between axles are between 11 and 25 feet.

During the 1999 Annual Meeting, there were no unfavorable comments on this item.

320-14 VC Appendix D, Definition of v_{\min}

(This item was adopted as part of the consent calendar.)

Source: National Type Evaluation Technical Committee Weighing Sector

Recommendation: Modify the definition of v_{\min} to read as follows:

**v_{\min} (minimum load cell verification interval). The smallest load cell verification interval, expressed in units of mass*, into which the load cell measuring range can be divided. [2.20, 2.21, 2.24*
*/Nonretroactive as of January 1, 2001
 (Added 1996)**

Add a new footnote to Table S.6.3.b. Notes For Table S.6.3.a. as follows:

21. The value of the load cell verification interval (v_{\min}) must be stated in mass units. In addition to this information a device may be marked with supplemental representations of v_{\min} .
[Nonretroactive January 1, 2000]

Modify the entry for Load Cell Verification Interval in Table S.6.3.a. Marking Requirements to reflect the addition of the proposed footnote above as follows:

Table S.6.3.a.

Marking Requirements

| To Be Marked With | Weighing Equipment | Weighing, load-receiving, and indicating element in same housing | Indicating element not permanently attached to weighing and load-receiving element | Weighing and load-receiving element not permanently attached to indicating element | Load cell with CC (11) | Other equipment or device (10) |
|---|--------------------|--|--|--|------------------------|--------------------------------|
| ... | | | | | | |
| Load Cell Verification Interval (v_{\min}) (21) | | | | | x | |
| ... | | | | | | |

For applicable notes, see Table S.6.3.b.

(Added 1990) (Amended 1992 and 1999)

Discussion: During the Weighing Sector's October 1998 meeting, comments indicated that many weights and measures officials and device manufacturers misunderstood the concept of v_{\min} values. When v_{\min} values are expressed as a percentage of the load cell capacity there is not enough information to determine how the value is derived when there are multiple capacities in the load cell family.

In 1997, the Sector discussed the similarities between U.S. and OIML marking requirements for load cells and the need to harmonize policy. The Sector understands that OIML mandates that load cell requirements be marked in units of mass. OIML also permits optional marking of values such as the "y" (y = maximum capacity/minimum load cell verification interval) and "z" (z = maximum capacity/(2 x minimum dead load output return)) which are relevant for multi-interval scales.

The Sector agreed that the NIST Handbook 44 requirement for marking a device with v_{\min} must be clarified to require that v_{\min} be expressed as a unit of mass; however, this would be a nonretroactive requirement and would not preclude manufacturers from including supplemental markings.

The Committee agreed that Tables S.6.3.a. and S.6.3.b. needed changing to clarify the nonretroactive status of the proposed definition; therefore, it added new footnote 21 to Table S.6.3.a. and the a reference to Table S.6.3.b. The Committee also agreed that the acceptable unit of measurement should be listed in the definition of v_{\min} and that this is not meant to prohibit supplemental units of measurement.

The Committee agreed with recommendations to include the following additional text in its report to further explain how to determine v_{\min} values. The text was editorially added by the technical advisor with the Committee's approval. The Committee believes that load cell manufacturers need additional time to meet the January 1, 2000, non-retroactive date; therefore, it has changed that date to January 1, 2001.

A load cell design is evaluated to establish its appropriateness for use in weighing systems under specific environmental conditions and applications. Each manufacturer determines the load cell's classification parameters for (1) mass-measuring range, (2) single-cell or multiple-cell application, (3) n_{\max} , (4) accuracy class, (5) v_{\min} , (6) loading direction, and (7) temperature limits. Load cell classification parameters along with other characteristics specified by the manufacturer affect compliance with performance requirements.

The v_{\min} is the smallest interval (expressed in mass) into which the load cell measuring range can be divided when testing the load cell. The measuring range represents the total mass value that falls between the minimum and maximum quantities applied to a load cell during use or test. Quantity values applied to load cells at any point within the measuring range must not exceed the maximum allowable load cell error allowed. Load cell errors are derived from scale tolerances; however, the tolerances are adjusted to account for metrological effects on the load cell output.

Load cells may be tested separately for compliance with influence factors and accuracy requirements as specified by the manufacturer for the load cell used in the system. In weighing systems, a mathematical relationship must be met between the load cell v_{\min} and the scale division. The relationship of the v_{\min} value to the scale division, d , for a specific scale installation is described in the formula below:

$$v_{\min} \leq \frac{d}{N}$$

(Also see Handbook 44 Scales Code Section paragraph S.5.4.(a) Relationship of Load Cell Verification Interval Value to the Scale Division)

The table below illustrates how to use the formula to calculate the maximum permissible v_{\min} values for load cells used in various electronic weighing system installations (scales without lever systems).

| Scale Division (d) | Number of Load Cells in the Scale (N) | | | | | | |
|---|---------------------------------------|----------|----------|----------|----------|----------|----------|
| | 2 | 3 | 4 | 6 | 8 | 10 | 12 |
| 20 lb | 14.14 lb | 11.55 lb | 10.00 lb | 8.16 lb | 7.07 lb | 6.32 lb | 5.77 lb |
| 50 lb | 35.36 lb | 28.87 lb | 25.00 lb | 20.41 lb | 17.68 lb | 15.81 lb | 14.43 lb |
| Maximum v_{\min} Values for Weighing System Application | | | | | | | |

Consider, for example, a scale with a 20 lb division, using eight load cells. Using the table above, the load cells used in the application have a v_{\min} which is less than the maximum value of 7.07 lb specified in the table.

320-15 W Stored Vehicle Tare Weights

(This item was withdrawn.)

Source: Carryover Item 320-10 (This item originated from the Southern Weights and Measures Association (SWMA) and first appeared on the Committee's 1998 agenda.)

Discussion: The Committee considered a proposal to develop requirements in NIST Handbook 44 for frequency of verification intervals, tolerances, procedures (Examination Procedure Outlines), and guidelines for weighing systems which use stored tare weights. The SWMA believed the proposal had merit and at its 1997 meeting recommended that the item be given informational status. The SWMA asked that other regions with feedback on this issue forward that information to Maryland Weights and Measures. Maryland did a preliminary study on the accuracy of stored tare weights. The study was sent to 23 States with 11 responding. Based upon the data collected, Maryland recommended the following examination procedure outline for verifying the proper use of stored tare weights:

- The scale should have been approved by the weights and measures authority within the last six months.
- Weigh ten vehicles individually.
- Compare vehicle weights to stored tare weights for agreement to plus or minus 600 lb.
- If two or more vehicles exceed the tolerance, reject the scales and conduct a follow-up inspection.
- If one or more vehicles exceed the stored tare weight by 1800 lb (3 times the tolerance), reject the scales and conduct a follow-up inspection.
- Require each location to reweigh vehicles, if conditions warrant, for compliance.

Maryland reported the following results from the preliminary survey:

| Location | Locations Visited | Weights Verified | Range of Errors (lb) | Vehicle Weight Load Ranges (lb) | Scale Tolerance Range (lb) (based on vehicle load) |
|----------|-------------------|------------------|----------------------|---------------------------------|---|
| A | 26 | | -180 to +570 | 21 000 to 33 000 | 60 to 80 |
| B | | 183 | -740 to +400 | 20 000 to 30 000 | 40 to 80 |
| C | | 48 | -1300 to +660 | 6700 to 31 900 | 20 to 80 |
| D | | 140 | -8900 to +2340 | 3000 to 46 000 | |
| E | | 8 | -340 to +300 | 20 200 to 35 800 | 40 to 80 |
| F | | 39 | -1020 to +680 | 9000 to 38 000 | 20 to 80 |
| G | | 44 | -4920 to +540 | 28 000 to 34 000 | 60 to 80 |
| H | | 113 | -4680 to +1060 | 6000 to 35 000 | 20 to 80 |
| I | | 36 | -320 to +260 | 23 000 37 000 | |
| J | | 57 | -660 to +2680 | 9300 to 43 700 | 20 to 100 |
| K | | 84 | -480 to +1200 | 12 000 to 42 300 | 40 to 100 |

Maryland determined that the range of errors found during the survey was -8900 lb to +2680 lb. The impact of the errors calculated for a load of sand or gravel at a cost of \$5.50 per ton with an error of 750 lb equates to a monetary value for each weight of \$2.06. If that error is multiplied by 4 trips per day over 240 work days the total dollar figure amounts to \$1,977.60 annually. Maryland noted that the practice of using stored tares is prevalent in other types of businesses, such as landfills and asphalt plants, where prices may reach \$70.00 per ton. In such cases, the same 750-lb error equates to \$26.25 per transaction. On four trips per day, the monetary value equals \$25,200.00 annually.

Maryland is interested in obtaining information on the accuracy of stored tare values from other jurisdictions.

One jurisdiction which does not permit the use of stored tare values indicated that the Maryland data demonstrates that stored tare values do not work. One representative of the scale industry reported that some operations which use the stored tare feature require the values to be automatically voided biweekly.

Based on comments and information received at the NCWM Annual Meeting in July 1998, the Committee gave this item informational status to enable Maryland to do additional study and analysis. The Committee encouraged jurisdictions which permitted the use of stored tare functions during vehicle weighing operations to forward information on procedures and policies (verification intervals, tolerance, test procedures) to Maryland. During its September 1998 Annual Meeting, the Western Weights and Measures Association (WWMA) agreed to support the concept of tolerances for stored tare values; however, WWMA felt the issue needed further study. The WWMA agreed that the California Weighmaster Regulation which requires tare value to be maintained to ± 2 percent of the established tare is acceptable. Additionally, WWMA believes that tolerance values should not be determined based on the price of a commodity. The WWMA concurred with the CWMA that the Laws and Regulations Committee should address this issue.

During its September 1998 Interim Meeting, the Central Weights and Measures Association (CWMA) agreed that NIST Handbook 130 should address this issue in the Method of Sale Regulation which provides accuracy and information requirements for railroad car tare weights. CWMA agreed that procedures should be established; however, they felt that more uniformity would be achieved when these guidelines are published in one document. CWMA recommended that, although this item has merit, it should be removed from the NCWM S&T agenda.

The Northeastern Weights and Measures Association believes the practice of stored tare weights should be prohibited for vehicle scale applications.

In 1998, the Southern Weights and Measures Association maintained its earlier recommendation that this item remain informational until other jurisdictions provide to permit further development of the proposal.

During the 1999 Interim Meeting, a Maryland representative reported that 15 jurisdictions reported inaccuracies with stored vehicle tare weights. Throughout 1999, Maryland planned to continue collecting data from other jurisdictions. The Scale Manufacturers Association is working to provide the Committee with the Federal Highway Administration (FHWA) procedures for vehicle stored tare weights. The Committee decided to withdraw this item to allow Maryland time to collect data and test procedures information.

321 Belt-Conveyor Scale Systems

321-1 I N.3.2.1. Accuracy of Material

Source: Carryover Item 321-1B (This item originated from the Western Weights and Measures Association and first appeared on the Committee's 1998 agenda.)

Discussion: The Committee is retaining this issue as an informational item after reviewing the Belt-Conveyor Scale Subcommittee's latest proposal noted below. The Committee believes that the Subcommittee is close to resolving the concerns heard during the 1999 Annual Meeting about the restrictive nature of the proposed "24 hour period" for the accuracy test of both the materials and reference scale. The Committee encourages that work to continue to reach a proposal all parties agree with by the October 1999 Sector Meeting.

N.3.2. Material Tests. – Use bulk material, preferably that material for which the device is normally used. Either pass a quantity of pre-weighed material over the belt-conveyor scale in a manner as similar as feasible to actual loading conditions, or weigh all material that has passed over the belt-conveyor scale. Means for weighing the material test load will depend on the capacity of the belt-conveyor scale and availability of a suitable scale for the test. To assure that the test load is accurately weighed and determined, the following precautions shall be observed:

~~(d) When a railway track scale is used to weigh the test load, not more than 48 hours should elapse between Where practicable, a reference scale should be tested within 24 hours before the determination of the weight of the test load used for a on the belt-conveyor scale material test load. When other scales are used, the elapsed time should be not more than 8 hours.~~

A reference scale which is not "as found" within maintenance tolerance should have its accuracy re-verified after the belt-conveyor test with a suitable known weight load if the "as found" error of the belt-conveyor scale material test exceeds maintenance tolerance values.

(e) If any suitable known weight load other than a certified test weight load is used for re-verification of the reference scale accuracy, its weight shall be determined on the reference scale after the reference scale certification and before commencing the belt scale material test.

(ef) The test shall not be conducted if the weight of the test load has been affected by environmental conditions.

N.3.2.1. Accuracy of Material. – ~~The quantity of material comprising used to conduct the a material test shall be weighed statically or on an uncoupled in motion railway track scale on a reference scale to an accuracy of at least within 0.1 percent. The scale used to weigh material shall be tested immediately prior to running the material test; where practicable, the substitution method of weighing should be used. Scales typically used for this purpose include Class H, III, and III L scales or a scale without a class designation with the tolerance as described in Table T.1.1. of Handbook 44 Section 2.20. (Added 1989)(Amended 1991, 1993, and 1998, and 200X)~~

Background: In 1998, the Committee considered the following proposal to modify N.3.2.1.

N.3.2.1. Accuracy of Material. - The quantity of material comprising the used to conduct a material test shall be weighed determined statically or dynamically on an uncoupled in motion railway track scale to an accuracy of at least 0.1 percent on a reference scale. The scale used to weigh material shall be tested immediately prior to running the material test. The reference scale shall be section tested or double draft tested (for double draft railroad track scale), as appropriate. Where practicable, substitution or strain-load testing shall be performed in the range of the tare weights (where applicable) and in the range of the gross weights of material used for official belt-conveyor scale system tests to an accuracy of 0.1 percent or better within 24 hours prior to weighing the reference material. The

reference scale shall be retested after completion of weighing the reference material to assure that the reference scale remained in tolerance throughout the test. Scales typically used for this purpose include are Class II, III, and III L scales, or a scale with tolerances as described in Table T.1.1. of Handbook 44 Section 2-20, including a vehicle scale, a hopper scale, a static railroad track scale, or an uncoupled-in-motion railroad track scale. (Added 1989)(Amended 1991, 1993 and 199X)

Comments to the NTETC Belt-Conveyor Scales Sector indicated that when a reference scale is tested in an "as used" condition or to capacity, many test results appear to be within tolerance until a strain load test is performed. It was also noted that each jurisdiction interprets the term "immediately" differently, so the term should be replaced with more explicit text. Based on those comments, the Sector recommended modifying paragraph N.3.2.1. as noted above. A representative of the railroad industry expressed concern that the proposed requirement to retest the reference scale may necessitate an increase in the train crew and locomotive time and exacerbate delays within the rail system. The Sector also discussed the difficulties in performing a substitution test on hopper scales and felt the reference to substitution tests should be removed from paragraph N.3.2.

At the 1998 Interim Meeting, the Committee heard comments indicating that the NTETC Belt-Conveyor Scales Sector's proposal to modify paragraph N.3.2.1. had generated concerns over (1) the 24-hour period being an insufficient time to verify reference materials; (2) the undue burden created by a retest of the reference scale; (3) the validity of the applicable tolerances (0.1 percent accuracy); and (4) the use of an uncoupled in-motion scale as the reference scale. It was suggested that the decision to retest the reference scale would be best handled on a case-by-case basis and performed in instances where field site conditions warrant the procedure.

It was noted that verification of the accuracy of a belt-conveyor scale with a material test introduces an additional level of uncertainty; therefore, a retest of the reference scale would minimize possible errors that may be introduced into the process. It was also pointed out that selecting an adequate reference scale is significantly important. Additionally, weights and measures officials and customers were concerned about the traffic and other uses of the reference scale during the verification of the reference material and the possibility that these variables may introduce additional uncertainty into the process.

Based on these comments, the Committee believes the Sector should further develop the proposal; therefore, it made this an informational item to allow for additional work.

At its 1998 meeting, the Western Weights and Measures Association (WWMA) felt the reference scale should have the ability to hold calibration during the material test. The WWMA recommended that it is more appropriate to reverify the reference scale. The WWMA noted that until the official with statutory authority can reverify the reference scale performance, no adjustments should be made to a belt-conveyor scale.

During its 1998 meeting, the Belt-Conveyor Scale Sector reaffirmed its support for an accuracy test of the reference scale before and after the material test. The Sector acknowledged that there are fewer complications when the scale under test and the reference scale are in the same proximity. The Sector could not agree on a recommendation for using a "monitor car" to reverify the accuracy of the reference scale. This practice would allow an alternative to a complete retest of the scale. Industry representatives expressed concern about the effects of wind, rain, and ice on the accuracy of a monitor car. One NTEP lab noted that the same principles of field standards' maintenance would apply to a monitor car. Based on these discussions, the Sector felt that it needed additional guidance to define the amount and type of testing appropriate for the subsequent test of the reference scale. Therefore, a subcommittee was formed to develop guidelines to recommend to the NCWM.

The Northeastern Weights and Measures Association (NEWMA) agreed with forming a subcommittee to develop guidelines on the retest of the reference scale. NEWMA stressed the importance of having a railroad industry representative on the subcommittee. NEWMA recognized the railroad's logistical problems and questioned the necessity of retesting the reference scale.

The Southern Weights and Measures Association acknowledged the Sector appointing a subcommittee and recommended that this item remain informational.

During the 1999 Interim Meeting, the Committee heard comments from belt conveyor scale customers supporting proposed changes to paragraph N.3.2.1. because of the uncertainties that result from inaccurate reference scales. The Committee also heard opposition to modifying paragraph N.3.2.1. from railroad industry representatives who felt the changes made the requirement cumbersome and that most problems resulted from using unsuitable reference scales.

The Committee recognized the difficulties operators encounter and the customers' concerns about using reference scales in remote locations. Therefore, the Committee encourages the Belt Conveyor Scale Subcommittee to complete its work to develop guidelines for applying the N.3.2.1. modifications. The Committee agreed to maintain the item as informational until the Subcommittee completes its work.

321-2 I UR. 2.2. Conveyor Installation and UR.2.2.1. For Scales not Installed by Manufacturer

Source: National Type Evaluation Technical Committee, Belt-Conveyor Scale Sector

Recommendation: Modify paragraph UR. 2.2. Conveyor Installation as follows:

UR.2.2. Conveyor Installation. - The design and installation of the conveyor leading to and from the belt- conveyor scale is critical with respect to scale performance. The conveyor may be horizontal or inclined, but, if inclined, the angle shall be such that slippage of material along the belt does not occur. Installation shall be in accordance with the scale manufacturer's instructions and the following:

- (a) a belt-conveyor scale shall be so installed that neither its performance nor operation will be adversely affected by any characteristic of the foundation, supports, or any other equipment;
- (b) all live portions of the scale shall be protected by appropriate guard devices to prevent accidental interference with the weighing operation;
- (c) suitable protection shall be provided for storage of any simulated load equipment.

~~UR.2.2.1. For Scales not Installed by the Manufacturer. - Unless the scale is installed in a conveyor designed and furnished by the scale manufacturer or built to the scale manufacturer's specifications, the conveyor shall comply with the following minimum requirements:~~
(Amended 1998)

- (ad) **Take-up Device.** - If the belt length is such that a take-up device is required, this device shall be of the counter-weighted type for either vertical or horizontal travel.
- (be) **Scale Location and Training Idlers.** - The scale shall be so installed that the first weigh idler of the scale is at least 6 m (20 ft) or 5 idler spaces, whichever is greater, from loading point, skirting, head or tail pulley, or convex curve in the conveyor. Any training idler shall be located at least 18 m (60 ft) from the centerline of the weigh span of the scale. Training idlers shall not be restrained at any time in order to force belt alignment.
(Amended 1998)
- (ef) **Concave Curve.** - If there is a concave curve in the conveyor, before or after the scale, the scale shall be installed so that the belt is in contact with all the idler rollers at all times for at least 6 m (20 ft) or 5 idler spaces, whichever is greater, before and after the scale. A concave curve shall start no closer than 12 m (40 ft) from the scale to the tangent point of the concave curve.
(Amended 1998)
- (dg) **Tripper and Movable Pulleys.** - There shall be no tripper or movable head pulleys in the conveyor.
- (eh) **Conveyor Length.** - The conveyor shall be no longer than 300 m (1000 ft) nor shorter than 12 m (40 ft) from head to tail pulley.
[Nonretroactive as of January 1, 1986.]
- (fi) **Conveyor Stringers.** - Conveyor stringers at the scale and for not less than 6 m (20 ft) before and beyond the scale shall be continuous or securely joined and of sufficient

size and so supported as to eliminate relative deflection between the scale and adjacent idlers when under load. The conveyor stringers should be so designed that the deflection between any two adjacent idlers within the weigh area does not exceed 0.6 mm (0.025 in) under load.

- (gi) **Identification of Scale Area.** - The scale area and 5 idlers on both ends of the scale shall be of a contrasting color, or other suitable means shall be used to distinguish the scale from the remainder of the conveyor installation, and the scale shall be readily accessible.
(Amended 1998)
- (hk) **Belt Composition and Maintenance.** - Conveyor belting shall be no heavier than is required for normal use. In a loaded or unloaded condition, the belt shall make full contact with the carry roll (center or horizontal portion) of the idlers. Splices shall not cause any undue disturbance in scale operation (see N.3.).
(Amended 1998)
- (il) **Uniformity of Belt Loading and Flow.** - The conveyor loading mechanism shall be designed to provide uniform belt loading. The distance from the loading point to the scale shall allow for adequate settling time of the material on the belt before it is weighed. Feeding mechanisms shall have a positive closing or stopping action so that material leakage does not occur. Feeders shall provide an even flow over the scale through the full range of scale operation. Sufficient impact idlers shall be provided in the conveyor under each loading point to prevent deflection of the belt during the time material is being loaded.
- (jm) **Belt Alignment.** - The belt shall not extend beyond the edge of the idler roller in any area of the conveyor.
(Amended 1998)

Discussion: The Committee has several concerns with UR.2.2.1.: (1) the perception that manufacturers and installers are held to different requirements; (2) the wording restricts new technology and does not address applications, such as weigh feeders; and (3) the requirements focus more on the device's design rather than on its performance. The Committee decided to change the status of the item to informational to allow time for these concerns to be addressed. The Committee strongly encourages the Sector and other interested parties to address these issues to align the belt-conveyor scale requirements with others requirements in Handbook 44.

Background: The National Type Evaluation Technical Committee, Belt-Conveyor Scale Sector discussed the differences in requirements "for scales not installed by the manufacturer." Sector members noted that the existing belt-conveyor scales code no longer reflects today's electronic devices and marketplace applications. Initially, the Sector thought that the phrase "for scales not installed by the manufacturer" had been added to provide some control over installations which included weigh feeders. The requirements associated with this language now appear to be enforced for belt-conveyor scales systems where the system installer is other than the original equipment manufacturer. It was suggested that the code may need to be revisited to determine if existing requirements apply to particular applications, such as in the food industry. The Sector noted that the requirements under UR.2.2.1. are appropriate for all belt-conveyor scales systems, including those installed by the original manufacturer. Therefore, they recommended that the text in the preamble of UR.2.2.1. be removed and the subsections renumbered to become part of paragraph UR.2.2.

The Central Weights and Measures Associations questioned why the requirement contains the language, "Not installed by the Manufacturer."

The Northeastern Weights and Measures Association (NEWMA) believes the requirements for belt-conveyor system design and performance should apply uniformly regardless of the installer. NEWMA was unable to review the Sector's proposal because it met prior to the Sector meeting. NEWMA indicated it wanted to review the Sector's position on this issue.

The Southern Weights and Measures Association acknowledged that the Sector was working on a recommendation to the NCWM, but took it no position on the issue.

The Committee heard one manufacturer's comments that the proposal may make some scales under 40 feet non-compliant with Handbook 44 (see subsection (eh))

321-3 I UR.2.2.1.(h) For Scales not Installed by the Manufacturer; Belt Composition and Maintenance

Source: National Type Evaluation Technical Committee, Belt-Conveyor Scale Sector

Recommendation: Amend paragraph UR.2.2.1. (h) Belt Composition and Maintenance for Scales not Installed by the Manufacturer to read as follows:

**UR.2.2.1. For Scales not Installed by the Manufacturer. – Unless the scale is installed in a conveyor designed and furnished by the scale manufacturer or built to the scale manufacturer's specifications, the conveyor shall comply with the following minimum requirements:
(Amended 1998)**

**(h) Belt Composition and Maintenance. – Conveyor belting shall be no heavier than is required for normal use. In a loaded or unloaded condition, the belt shall make ~~full~~ continuous contact with the carry roll (center or horizontal portion) of the idlers. Splices shall not cause any undue disturbance in scale operation (see N.3.).
(Amended 1998 and 1999)**

Discussion: At the October 1998 meeting of the National Type Evaluation Technical Committee, the Belt-Conveyor Scale Sector agreed that the language in the modification to paragraph UR.2.2.1.(h) needs further clarifying. The Sector acknowledged that it is difficult to verify that a belt remains in "full" contact with the carry roll. The Sector recognized that contact is affected by the angle of troughing, quality of the belt, and belt temperature. The Sector's original concern was with idlers, which either intermittently contact the belt or fail to make contact with the belt at all. The Sector believes the proposed modification to UR.2.2.1.(h) would clarify its original intent.

During the 1999 Annual Meeting, the Committee had several concerns with UR.2.2.1.: (1) the perception that manufacturers and installers are held to different requirements; (2) the wording restricts new technology and does not address applications, such as weigh feeders; and (3) the requirements focus more on the device's design rather than on its performance. One Sector member noted that belts, which are too thick, act like bridges suspending the material weight so that it does not register. Based on those concerns, the Committee changed the status of the item to informational. The Committee strongly encourages the Sector to address these issues to align the belt-conveyor scale requirements with others in Handbook 44.

321-4 I UR.3.2. (c) Maintenance

Source: Carryover Item 321-7 (This item originated from the National Type Evaluation Technical Committee Belt-Conveyor Scale Sector and first appeared on the Committee's 1998 agenda.)

Recommendation: The Committee considered a proposal to remove paragraph UR.3.2. (c) Maintenance from the Belt-Conveyor Scale Systems Code.

**e) ~~Scale Alignment. – "Wire line" (0.5 mm or 0.02 in diameter piano wire or equivalent nylon line) alignment checks shall be conducted when conveyor work is performed in the scale area or in accordance with manufacturer's recommendation. A material test is required after any realignment.
(Amended 1986)~~**

Discussion: The NTETC Belt-Conveyor Scales Sector believes that optimum belt-conveyor scale system performance requires good maintenance practices. Both installation and maintenance should be performed according to the

manufacturer's instructions. Therefore, these procedures may vary depending upon the specific system design, operation, and technology. The Sector believes there are general and user code sections which adequately address these practices and the requirements outlined in paragraph UR3.2.(c). Consequently, the Sector recommended that UR3.2.(c) be removed from NIST Handbook 44.

The S&T Committee acknowledged that scale alignment procedures will vary based on the manufacturer's instructions, and user requirements should be available to address maintenance in this area. The Committee understands that field officials have difficulty determining the wire line requirement in paragraph (c), and they may use other methods to verify scale alignment. Therefore, the Committee believes the paragraph has merit but agrees with the Sector that it may restrict alternative technology. In 1998, the Committee recommended that this item be given informational status to provide time for the Sector to develop less restrictive language that provides appropriate guidelines for determining proper scale alignment.

The Western Weights and Measures Association and Northeastern Weight and Measures Association supported the Belt-Conveyor Scale Sector's recommendation to remove this requirement from NIST Handbook 44.

The Southern Weights and Measures Association acknowledged that the Sector is working to develop a proposal on the issue of maintaining scale alignment, but made no specific comments on the issue.

During the 1998 Interim Meeting, the Committee heard additional input on field officials' inability to verify belt alignment with piano wire. Additionally, other means such as selecting suitable belt scale idlers are available to test and to ensure proper belt alignment. Because this requirement is unenforceable as written, the Committee recommended that paragraph UR3.2.(c) be removed from the Handbook 44.

During the 1999 Annual Meeting, a member of the Sector commented that a weights and measures official may not be capable of verifying this requirement; however, it is essential to provide scale alignment information to scale manufacturers. Consequently, the Committee gave this item informational status and asked that the Sector complete work to identify alternate means to determine scale alignment.

322 Automatic Bulk Weighing Systems Code

322-1 W N.2.1. Verification Interval

(This item was withdrawn.)

Source: Carryover Item 322-1 (This item originated from the Southern Weights and Measures Association and first appeared on the Committee's agenda in 1998.)

Discussion: The Committee considered a proposal to add the following new paragraph N.2.1. Verification Interval to the Automatic Bulk Weighing Systems Code as follows:

N.2.1. Verification Interval. - Where approved test weights remain in one location, are only moved during testing of the scale, and are protected from physical abuse or exposure to corrosive elements, the calibration interval could be extended beyond the normal one-year or two-year period. The time period for resealing or recertification of these weights may, at the discretion of the official with statutory authority, be extended for a period not to exceed ten (10) years. However, should the test weights be removed from the location for any reason, except when authorized by the official with statutory authority, all test weights shall be recertified prior to placing them in service.

During the Southern Weights and Measures Association (SWMA) 1997 Annual Meeting, the SWMA noted that the National Conference on Weights and Measures (NCWM) had not formally addressed calibration intervals for field standards. Traditionally, the state metrology laboratory is the authority that establishes the cycle for recalibration of field standards. Several weights and measures jurisdictions have incorporated requirements for the frequency of recalibration of field standards as part of their laws and regulations. The SWMA notes that most jurisdictions have established a 1-year calibration interval for Class F field standards. Some intervals may vary based on historical analysis of data on the "as found" condition of the standards.

Based on comments heard during the 1998 Interim and Annual Meetings, the Committee recommended several modifications to the SWMA's proposal as outlined in the discussion above. The modifications clarify the maximum permissible calibration interval, the test weight location, and the responsibilities of the official with statutory authority.

The Committee acknowledged that the proposal was prompted by the need to address the extensive, burdensome, and often unwarranted procedures required to verify hopper scale standards. The Scale Manufacturers Association (SMA) indicated that it could support this requirement only if it applied solely to hopper scale standards. The Committee expressed concern that NIST Handbook 44 does not contain verification intervals for other standards and that the proposal may conflict with requirements that the Metrology Subcommittee is developing. Consequently, the Committee decided to maintain the item as an information item to allow time for further development of the issue. In the meantime, the Committee believes the metrologist or official with authority in each jurisdiction should determine the required verification intervals.

At its 1998 meeting, the Western Weights and Measures Association (WWMA) recommended that the item maintain its informational status until the Metrology Subcommittee completed its work. The WWMA believes this issue might be better addressed in Handbook 145, Handbook for the Quality Assurance of Metrological Measurements. The WWMA recommended the language in the proposal be modified to state that the calibration interval “*may* be extended beyond the normal one-year or two-year period” instead of “*could* be extended.”

At its 1998 Annual Meeting, the Northeastern Weights and Measures Association (NEWMA) indicated that requirements for certification intervals are better addressed in NIST Handbook 130, Uniform Weights and Measures Law, Section 3 Physical Standards. NEWMA understood that the Metrology Subcommittee is updating the Handbook 105 Series to address the issue of certification intervals. NEWMA believes the NCWM should consider the language the Metrology Subcommittee develops.

During its 1998 Annual Meeting, SWMA recognized the Metrology Subcommittee's work to develop a 105 Series Handbook which addresses calibration intervals for field standards. The SWMA believes that Handbook 105 is a more appropriate document to provide guidance on calibration intervals.

The Central Weights and Measures Association (CWMA) felt that this issue would be more appropriately addressed in NIST Handbook 105. CWMA believes the proposal provides no greater authority to weights and measures officials than already exists. Therefore, CWMA recommended withdrawing this proposal from the NCSW S&T agenda.

The Committee considered recommendations to include a reference to the 105 Series in the Fundamental Considerations, because several Handbook 44 code sections lack any reference to the 105 Series. The NCWM is working to correct this inconsistency with other publications such as Publication 14.

The Metrology Subcommittee presented the Committee with a draft NIST Handbook 105-8, Specifications and Tolerances for Reference Standards and Field Standard Weights and Measures Recommended Calibration Intervals, to review. The Committee encourages the Metrology Subcommittee to complete Handbook 105-8. The Committee plans to provide comments to the Subcommittee on that draft NIST Handbook 105-8. The Metrology Subcommittee plans to provide guidelines based on data gathered this year. The Committee believes that Handbook 105-8 is a more appropriate document than Handbook 44 in which to place the verification intervals for test standards. Consequently, the Committee decided to withdraw this item from its agenda.

324 Automatic Weighing Systems – Tentative Code

324-1 VC Table S.7.a. Marking Requirements

(This item was adopted as part of the consent calendar.)

Source: Southern Weights and Measures Association

Recommendation: Amend Table S.7.a. Marking Requirements to include maximum belt speed by inserting a new marking requirement in the table as follows:

| Table S.7.a. Marking Requirements | | | | | |
|---|--|--|--|------------------------|--------------------------------|
| Weighing Equipment To Be Marked With | Weighing, load-receiving, and indicating element in same housing | Indicating element not permanently attached to weighing and load-receiving element | Weighing and load-receiving element not permanently attached to indicating element | Load Cell With CC (11) | Other Equipment or device (10) |
| ... | | | | | |
| Safe Load Limit | | | | x | |
| Load Cell Verification Interval (v_{min}) | | | | x | |
| <u>Maximum Belt Speed (m/sec or m/min)</u> | <u>x</u> | | <u>x</u> | | |

Note: See Table S.7.b. for applicable parenthetical notes.

Add the following definitions to Handbook 44:

maximum capacity. the largest load that may be accurately weighed.

minimum capacity. the smallest load that may be accurately weighed. The weighing results may be subject to excessive error if used below this value.

Discussion: In 1997, the Automatic Weighing Systems Work Group agreed that automatic weighing systems should be marked with the maximum belt speed. This proposal was inadvertently omitted from the NCWM S&T Committee's agenda. The Work Group received comments indicating that there is a need to clarify the meaning of two other marking requirements in Table S.7.a. (1) maximum capacity (Max); and (2) minimum capacity (Min). Initially, no specific language was suggested.

The Committee heard comments that it should be permissible to indicate in both meters per second and meters per minute. One NTEP laboratory noted that limiting the belt speed to meters per second would inadequately reflect the available scale capacities and result in some weighing systems being marked in belt speeds which are several digits behind the decimal point. Therefore, a requirement to mark belt speed solely in meters per second is inappropriate for all automatic weighing systems. The Committee also recognized that OIML requires marking the belt speed in meters per second. Therefore, the Committee believes both units are appropriate.

During the 1999 Annual Meeting, the Committee reviewed the definitions for "maximum capacity" and "minimum capacity." No unfavorable comments were heard on these definitions; therefore, the text was included in the final proposal to the NCWM.

330-1 I S.1.5.3.(a) Width; Indicator Index

Source: National Type Evaluation Technical Committee Measuring Sector

Recommendation: Modify paragraph S.1.5.3. (a) to read as follows:

S.1.5.3. Width.

- (a) The index of an indicator shall not be wider than the width of the widest narrowest graduation°.

(b) If the index of an indicator extends over the entire length of a graduation, it shall be of uniform width throughout the portion that coincides with the graduation.

[*Nonretroactive as of January 1, 2000.]

Discussion: NIST Handbook 44 Liquid-Measuring Devices Code Paragraph S.1.5.3. (a) requires that the width of the index of an indicator be no greater than the width of the *widest* graduation. Measurement Canada has a similar requirement requiring that the width of the index be no greater than the width of the *narrowest* graduation. It appears that Measurement Canada's requirement may be more appropriate because it prohibits an indicator index with dimensions that may obscure a graduation. Consequently, the Measuring Sector proposed that paragraph S.1.5.3.(a) be modified to correct the discrepancy.

The Committee believes that the proposal should be a nonretroactive requirement. The Committee received no unfavorable comments on this item at the 1999 Interim Meeting; therefore, the Committee recommended this item be adopted as written. The Committee clarified that for arrow-shaped indicators the narrowest portion at the tip of the arrow could not be wider than the narrowest graduation.

At the 1999 Annual Meeting, the Committee considered comments that the current paragraph S.1.4.3. is more appropriate because a wider index design facilitates reading the graduation. In contrast, when the index design is narrower than the narrowest graduation, users need to read the indication to the nearest graduation. The Committee acknowledged that there is some validity to this position; however, the uncertainties associated with reading indices which obscure graduations also cause concern.

The Committee heard comments about large numbers of analog indicators still in use; however, the proposal would only apply to new devices. Measurement Canada believes the proposal is a more appropriate design requirement for indicator indices than what Handbook 44 presently includes. Based on these discussions, the Committee changed the item to informational status. The Committee believes that the proposed change should be made and, unless it receives more data to support the existing Handbook 44 language, the Committee will return the proposal to voting status at the 2000 Interim Meeting.

330-2 V Table S.2.2. Categories of Device and Methods of Sealing; Category 2

((This item was adopted.))

Source: NCWM Specifications and Tolerances Committee

Recommendation: In response to inquiries about how to apply the January 1, 2005 enforcement date for Category 2 devices, the Committee recommended modifying Table S.2.2. as follows:

Table S.2.2. Categories of Device and Methods of Sealing

| Categories of Device | Method of Sealing |
|---|--|
| Category 1: No remote configuration capability. | Seal by physical seal or two event counters: one for calibration parameters and one for configuration parameters. |
| <p>Category 2: Remote configuration capability, but access is controlled by physical hardware.</p> <p>The device shall clearly indicate that it is in the remote configuration mode and record such message if capable of printing in this mode or shall not operate while in this mode.</p> <p>[Category 2 applies only to devices manufactured prior to January 1, 2005. Devices with remote configuration capability manufactured after that date must meet the sealing requirements outlined in Category 3. Devices without remote configuration capability manufactured after that date will be required to meet the minimum criteria outlined in Category 1.]</p> | <p>[The hardware enabling access for remote communication must be on-site. The hardware must be sealed using a physical seal or an event counter for calibration parameters and an event counter for configuration parameters. The event counters may be located either at the individual measuring device or at the system controller; however, an adequate number of counters must be provided to monitor the calibration and configuration parameters of the individual devices at a location. If the counters are located in the system controller rather than at the individual device, means must be provided to generate a hard copy of the information through an on-site device.]*</p> <p>[*Nonretroactive as of January 1, 1996]</p> |
| <p>Category 3: Remote configuration capability access may be unlimited or controlled through a software switch (e.g., password).</p> <p><u>The device shall clearly indicate that it is in the remote configuration mode and record such message if capable of printing in this mode or shall not operate while in this mode.</u></p> <p><u>[Nonretroactive as of January 1, 2001]</u></p> <p>Category 3 will be modified in 2005 to apply to <u>Nonretroactive as of January 1, 2005</u> all devices with remote configuration capability must comply with the sealing requirements of Category 3.</p> | <p>An event logger is required in the device; it must include an event counter (000 to 999), the parameter ID, the date and time of the change, and the new value of the parameter. A printed copy of the information must be available through the device or through another on-site device. The event logger shall have a capacity to retain records equal to ten times the number of sealable parameters in the device, but not more than 1000 records are required. (Note: Does not require 1000 changes to be stored for each parameter.)</p> |

[Nonretroactive and enforceable as of January 1, 1995.]
(Table added 1993) (Amended 1995 and 1998)

Discussion: In 1998, the NCWM adopted changes to Table S.2.2. Categories of Device and Methods of Sealing which generated numerous questions about how to apply the enforcement date to Category 2 devices. After January 1, 2005, the NCWM intended for all devices with remote configuration capability to meet Category 3 sealing requirements. This requirement resulted in several interpretations about whether or not Category 2 devices in use on December 31, 2004, would comply after 2005.

Industry representatives who attended the 1998 NCWM indicated that only Category 1 or 3 devices were in use at that time. Therefore, Category 2 devices were expected to be phased out of use and any requirements that addressed Category 2 devices could “sunset.” The Committee recognized that the use of the term “sunset” contributed to the confusion about the status of Category 2 devices after January 1, 2005.

The Committee agreed that the original intent of the changes to Table S.2.2. was to require all new devices equipped with remote configuration to meet Category 3 requirements on the January 1, 2005 enforcement date. NCWM did *not* intend that Category 2 devices equipped with remote configuration be modified to meet Category 3 requirements or be removed

from service if they were operating in compliance prior to January 1, 2005. The Committee agreed that Table S.2.2. should have additional language to clarify the original intent of the changes.

The new requirements for all remotely configured devices to be Category 3 are nonretroactive. This requirement is *not* enforceable for (1) devices manufactured before January 1, 2005, or (2) new and used devices brought into a state before January 1, 2005. The new requirement is enforceable for remotely configured noncommercial devices placed into to a commercial application on or after January 1, 2005.

The Committee expressed concern that having remote access to change sealable parameters might facilitate fraud. Consequently, the Committee added text to Table S.2.2. to require some indication that Category 3 devices are in the remote configuration mode. Industry is cautioned that there may be instances where Category 2 devices manufactured prior to January 1, 2005 are prohibited from sale if brought into a state after the effective date.

The Meter Manufacturers Association supported the proposal.

At the 1999 Annual Meeting, the Committee heard comments from meter manufacturers that the proposed January 1, 2000, enforcement date provided insufficient time to comply. Consequently, the Committee changed the enforcement date for Category 3 devices to indicate a calibration or configuration mode to January 1, 2001.

For additional background information on this item refer to the Committee's 1997 and 1998 final reports in NIST Special Publications 920 and 932, respectively.

330-3 W N.4.2. Special Tests

(This item was withdrawn.)

Source: Central Weights and Measures Association (CWMA)

Discussion: The Committee considered the following proposal to amend paragraph N.4.2. Special Tests to make the special test an option.

N.4.2. Special Tests. - "Special" tests to develop the operating characteristics of a liquid-measuring device and any special elements and accessories attached to or associated with the device, ~~shall~~ may be made as circumstances require. Any test except as set forth in N.4.1. shall be considered a special test.

CWMA believes that a special test on a retail motor-fuel dispenser should be performed when circumstances warrant it. CWMA felt that a significant amount of time is spent conducting special tests and returning product delivered to storage. One CWMA jurisdiction conducted a recent study on 657 retail motor-fuel dispensers and found that 96 percent of the normal tests results were within 2 cubic inches of tolerance, whereas 98 percent of the special test results were within 3 cubic inches of tolerance. That study found only one dispenser where the special test was within maintenance tolerance and the normal test outside of the acceptable tolerance.

CWMA believes most customers operate the dispenser at maximum flow rates rather than at rates which require special tests. Additionally, CWMA indicated that the effects of errors detected by special or slow flow tests have minimal effect on the final transaction. CWMA recommended the proposed language, which would reduce test time and make the special "slow flow" test discretionary.

The Committee recognized that a key purpose of the slow test is not solely to test the device as used, but to identify wear in the meter. Part of an official inspection is to determine that the user maintains equipment as Handbook 44 requires. The slow test is essential to verify this. The NIST Office of Weights and Measures, the Meter Manufacturers Association, and one jurisdiction noted that the slow flow or special test is necessary to detect problems with the meter's performance.

The Committee acknowledged that local regulation and the availability of resources affect inspection frequency. Comments were also made that rather than eliminating an essential portion of the test, jurisdictions may want to consider changing inspection frequencies. For example, rather than testing all devices in a station, an inspector might select a small number of devices to test according to a sampling plan. During the open session, comments indicated that permissive requirements (i.e. use of the term "may") are not enforced. One jurisdiction indicated that it interpreted that all tests except the normal test as optional, and Handbook 44 needs to clarify which tests are mandatory. Some

jurisdictions have established variable frequencies of inspection; however, that schedule is based on data from statistical inspection and test of devices. Handbook 44 does not recognize a partial test of devices. Comments were also made that, if a slow test is not performed, the inspector risks incorrectly approving a device that has inaccuracies at lower flow rates. There was also concern that, as written, the proposal would eliminate special tests on meters other than retail motor fuel dispensers.

The Committee reached a consensus that sufficient data had not been submitted to demonstrate that the special test should be optional. The Committee acknowledges that there are jurisdictions that cite paragraph three of Section S. in the Introduction of Handbook 44 to justify not performing every test in a particular code section. Presently, the Committee encourages both a normal and special device test unless the Committee receives additional data on the proposal. Therefore, the Committee withdrew this item.

330-4 VC T.2.1.4. Tolerances for Devices Delivering Less than One Gallon

(This item was adopted as part of the consent calendar.)

Source: Carryover Item 330-2 (This item originated from the National Type Evaluation Technical Committee Measuring Sector and first appeared on the 1998 agenda.)

Recommendation: Add a new paragraph T.2.1.4. Tolerances for Devices Delivering Less than One Gallon as follows:

T.2.1.4. Tolerances for Devices Designed to Primarily Deliver Less than One Gallon. - Maintenance tolerances and acceptance tolerances shall be as shown in Table 2. Tolerances for Slow-Flow Meters.

Discussion: In 1998, the Committee considered a proposal from the Measuring Sector to add the following new paragraph T.2.1.X. to address retail liquid-measuring devices which deliver small quantities of product.

T.2.1.X. Tolerances for Devices Delivering Less than One Gallon. - Maintenance tolerances and acceptance tolerances shall be as shown in Table 2. Tolerances for Slow-Flow Meters.

During the September 1998 Interim Meeting of the Central Weights and Measures Association (CWMA), the CWMA recommended the following alternative proposal to clarify the intended amount of product to be delivered through these devices.

T.2.1.X. Tolerances for Devices Intended to Deliver Less than One Gallon. - Maintenance tolerances and acceptance tolerances shall be as shown in Table 2. Tolerances for Slow-Flow Meters.

During its October 1998 Interim Meeting, the Northeastern Weights and Measure Association (NEWMA) considered the original proposed text, and recommended the following alternative proposal to change the definition of slow flow meter.

slow-flow meter. A retail device designed for the measurement, at very slow rates (less than 4 L (10 gal) per hour), maximum flow rate not to exceed one gallon per minute of liquid fuels at individual domestic installations.[3.30]

NEWMA believed that modifying the definition of “slow-flow meter” addressed the appropriate classification for these new devices and avoided any conflicts with paragraph N.3.4.’s requirements for a test draft of at least 5 gallons.

At its October 1998 Annual Meeting, the Southern Weights and Measures Association recommended that the proposal be modified to clarify the specific type of device design to read:

T.2.1.X. Tolerances for Devices Designed for Normal Deliveries of Less than One Gallon. - Maintenance tolerances and acceptance tolerances shall be as shown in Table 2. Tolerances for Slow-Flow Meters.

The Committee reviewed several alternative proposals to address retail liquid-measuring devices which are used to deliver small quantities of product. The Committee felt that the SWMA’s proposal had the greatest merit because it recognizes the manufacturers’ intended use of the device. The requirement as worded may be incorrectly applied to retail

motor fuel dispensers, which are also rated to accurately deliver one gallon. Consequently, the Committee modified the SWMA proposal to reflect that the device is designed to *primarily* deliver less than 1 gallon.

During the 1999 Annual Meeting, the Committee heard no unfavorable comments on this item. The Meter Manufacturers Association indicated its support for the proposal as modified.

Additional background information on this item is included in the Committee's 1998 final report located in NIST Special Publication 932.

330-5 D Appendix D, Definition for Retail Device

Source: Western Weights and Measures Association (WWMA)

Discussion: The Committee considered a proposal to modify the following definition of retail devices.

retail device. A liquid measuring device primarily used for non-resale use:

single deliveries of less than 378 L (100 gal),

~~retail~~ single deliveries of motor fuels to individual highway vehicles, watercraft or aircraft; or

single deliveries of liquefied petroleum gas ~~for domestic use and liquefied petroleum gas~~ or
liquefied anhydrous ammonia ~~for nonresale use~~.

(Amended 1987 and 199X) [3.32]

The WWMA found that the NIST Handbook 44 definition of retail devices inadequately addresses applications which are typically classified as retail operations. For example, devices classified as retail motor-fuel dispensers (RMFD) in vehicle applications in marinas are used for separate deliveries of fuel in amounts of less than and in excess of 100 gallons to boats, vessels, or other watercraft. The definition of a retail device applies to deliveries of less than 100 gallons; however, those exceeding 100 gallons no longer meet the definition. Weights and measures officials and service industry representatives must decide which tolerances apply to these devices. Maintenance tolerances for a wholesale device is 0.03 percent and 0.05 percent for a special test. Based on a 50-gallon test, the normal and special tolerances for a wholesale device equates to 34.65 cubic inches and 57.75 cubic inches, respectively. The retail device tolerances are 1 cubic inch per indicated gallon, which equates to plus or minus 51 cubic inches for both tests. The WWMA believes that the modifications to the definition of a retail device would provide a uniform interpretation of the appropriate tolerance for a device type used in multiple applications.

The Meter Manufacturers Association (MMA) opposed the proposal because it is unclear whether or not the requirement would apply to devices based on deliveries above or below 100 gallons and how to classify them. The MMA also felt that further discussions are needed to determine if the definition would also apply to devices other than Liquid Measuring Devices.

The Committee agreed that the retail device definition warranted further development and asked the WWMA to complete that work. The Committee recommends the WWMA review past work conducted by the NCWM on this issue. The Committee notes that several Handbook 44 requirements use the term "retail"; therefore, Handbook 44 should be reviewed in entirety to ensure that the proposal causes no conflicts.

The Committee also heard that the definition of wholesale is unclear and insufficient to determine tolerances. Several comments heard during the open session indicate that one approach may be to define the terms retail and wholesale based on meter flow rates, rather than by application or delivery amount. The Committee gave the proposal a developmental status to enable additional development of the item by WWMA.

After discussions at the 1999 Annual Meeting, the Committee believes two approaches can be used to develop this issue. One approach is to take on the task of defining "retail device" as part of the work in revising Handbook 44. If so, that work should also include defining "wholesale device." However, the Committee alternatively recommends a second approach, which is to base the tolerances strictly on the test draft size. One exception to that rule is to keep the basis for the 5- and 10-gallon test draft tolerances the same as current Handbook 44 tolerances. Many liquid-measuring device (LMD) tolerances are based on the product type, the portions of error contributed at the beginning and end of a delivery, and the size of the test draft. To follow these same principles in the LMD Code would align LMD tolerances with other

device technology tolerances, such as mass flow meters. The Committee felt that percentage tolerances may be more appropriate for all types of meter technology and offered the table below to compare old and new tolerance values.

| Test Draft Size | Handbook 44 Retail Maintenance Tolerance | % of Test Draft in Retail Maintenance Tolerance Error | Retail Acceptance Tolerance | Proposed 0.3% Maintenance Tolerance for Retail or Wholesale Applications | Proposed 0.2 % Acceptance Tolerance for Retail or Wholesale Applications |
|-----------------|---|--|-----------------------------------|---|---|
| 5 gallon | 6 cu in | 0.52 | 3 cu in | N/A | N/A |
| 10 gallon | 11 cu in | 0.48 | 5.5 cu in | N/A | N/A |
| 25 gallon | 26 cu in | 0.45 | 13 cu in | 17 cu in | 11.5 cu in |
| 50gallon | 51 cu in | 0.44 | 25.5 cu in | 34 cu in | 23 cu in |
| 100 gallon | 101 cu in | 0.437 | 50.5 cu in | 69 cu in | 46 cu in |
| 185 gallon | 186 cu in | 0.435 | 93 cu in | 128 cu in | 85 cu in |
| 200 gallon | 201 cu in | 0.435 | 100.5 cu in | 139 cu in | 92.4 cu in |
| 500 gallon | 501 cu in | 0.434 | 250.5 cu in | 346.5 cu in | 231 cu in |
| 1000 gallon | 1001 cu in | 0.433 | 500.5 cu in | 693 cu in | 462 cu in |
| 1500 gallon | 1501 cu in | 0.433 | 750.5 cu in | 1039 cu in | 693 cu in |

330-6 VC

T.2.3.X. Measurement of Asphalt

(This item was adopted as part of the consent calendar.)

Source: Specifications and Tolerances Committee

(This item was added during the 1999 Interim Meeting as a result of related discussions on Item 337-4 and to ensure consistency in the code requirements which apply to devices competing in the same applications.)

Recommendation: Add the following new paragraph T.2.3.2. Measurement of Asphalt to Section 3.30 and renumber existing paragraphs T.2.3.2. through T.2.3.4. accordingly.

T.2.3.2. Measurement of Asphalt. – Maintenance tolerances and acceptance tolerances shall be:

| | <u>Acceptance</u> | <u>Maintenance</u> |
|-----------------------------------|--------------------------|---------------------------|
| <u>Asphalt below 50 °C</u> | <u>0.2 %</u> | <u>0.3 %</u> |
| <u>Asphalt above 50 °C</u> | <u>0.3 %</u> | <u>0.3 %</u> |

T.2.3.2. 3.

Measurement of Other Liquids.- Maintenance tolerances and acceptance tolerances shall be:

| | Acceptance | Mainten ance |
|-------------------------|-------------------|-------------------------|
| Normal test | 0.2 % | 0.3 % |
| Special test | 0.5 % | 0.5 % |

T.2.3.3.4. Repeatability. When multiple tests are conducted at approximately the same flow rate, the range of the test results for the flow rate shall not exceed 40 percent of the applicable tolerance. This tolerance does not apply to the test of the automatic temperature compensating system.

T.2.3.4.5. Automatic Temperature Compensating Systems. – The difference between the meter error (expressed as a percentage) for results determined with and without the automatic temperature compensating system activated shall not exceed:

Discussion: During the review of agenda item 337-4, tolerance for mass flow meters, the Committee recognized that asphalt is measured using several meter technologies; therefore, it was appropriate to propose corresponding tolerances for competing device technologies.

For additional background information on this issue, see agenda item 337-4.

331 Vehicle-Tank Meters Code

331-1 V UR.2.2.1. Exceptions for the Sale of Aviation Fuel

(This item was adopted.)

Source: Southern Weights and Measures Association (SWMA)

Recommendation: Add new paragraph UR.2.2.1. Exceptions for the Sale of Aviation Fuel to NIST Handbook 44 to read as follows:

UR.2.2.1. Exceptions for the Sale of Aviation Fuel. - The provisions of UR.2.2. Ticket Printer; Customer Ticket shall not apply to vehicle-mounted metering systems used solely for the sale of aviation fuel into aircraft and for aircraft-related operations.

Discussion: Over 60 members of the National Air Transportation Association (NATA) expressed concern over paragraph UR.2.2.'s retroactive requirement for vehicle mounted metering systems to be equipped with a ticket printer by January 1, 1999. Industry members have safety concerns, such as flying debris or device attendants who attempt to capture tickets being carried into engine propellers. NATA members expressed additional concerns over the cost to fleet operators working to retrofit systems with ticket printers by the enforcement date. NATA noted that pilots must comply with other Federal Aviation Administration regulations, and pilots must also perform weight balances which ensure that there is no misrepresentation of the fuel delivery. NATA indicated that paragraph UR.2.2. gives an unfair competitive advantage to stationary units used for similar aviation applications.

The Central Weights and Measures Association (CWMA) agreed that the January 1, 1995, enforcement date in paragraph UR.2.2. should be maintained; however, the retroactive date should be eliminated.

SWMA considered two approaches for an exemption to the aviation fueling industry: (1) extending the retroactive date for all ticket printers, or (2) changing only the retroactive date for the sale of aviation fuel. Weights and measures jurisdictions present expressed concern for companies which have already invested in equipping their vehicle-tank meters with ticket printers. After lengthy discussion, the SWMA unanimously agreed that the above proposal was the most amenable solution.

The Northeastern Weights and Measures Association (NEWMA) indicated a belief that a ticket printer exemption for the aircraft fueling industry is unwarranted and recommended that the retroactive date be extended to January 1, 2001.

During the 1999 Interim Meeting, one industry representative noted the importance of uniformity in applying Handbook 44 requirements, and he questioned which sector would be next to ask for an exemption. One suggestion was to ask any party who requests an exemption to explain the technical reasons warranting it.

Several Weights and Measures representatives indicated that jurisdictions have problems enforcing retroactive requirements after the effective date for devices which were in use and in compliance shortly before the enforcement date. Some jurisdictions enact special local regulations which exempt devices already in use from retroactive enforcement dates.

At the Interim Meeting, jurisdictions expressed additional concerns where industry anticipated the enforcement date and equipped their vehicle tank meters with ticket printers prior to January 1, 1999. Ohio noted that, based on the customer being present during the transaction, it recommended an exemption for the aircraft industry in 1993. The NCWM considered Ohio's proposal but felt it did not have merit. The Committee deliberated at length on alternative proposals to extend or eliminate the retroactive date. The Committee also understood that a number of jurisdictions have suspended enforcement of UR.2.2. Ticket Printer; Customer Ticket pending a decision by the NCWM on UR.2.2.1.

During the 1999 Annual Meeting, the Committee heard more comments from NATA about the preflight procedures to verify fuel quantities, and how weights and measures officials granted exemptions and met with industry to determine the impact of the proposal. The Committee reached a consensus that the proposal move forward for a vote.

Background: In 1992, the National Conference on Weights and Measures (NCWM) adopted a requirement for vehicle-mounted liquefied petroleum gas measuring devices (See 3.32. paragraph UR.2.6.) to be equipped with ticket printers. In 1993, the NCWM adopted a similar requirement for vehicle-tank meters; however, the NCWM permitted a 6 year phase-in period to allow a reasonable amount of time for device operators to acquire ticket printer equipment. The NCWM recognized that most customers were not present during transactions and that errors occurred when operators manually entered transaction information on delivery tickets. Therefore, the NCWM felt that ticket printers provided a timely record of the transaction and a way to evaluate the accuracy of delivery invoices. The NCWM also acknowledged that technology is readily available to interface ticket printers with vehicle-mounted measuring systems.

334 Cryogenic Liquid-Measuring Devices

334-1 D Recognition of Liquefied Natural Gas Application

(Based on discussions during the Interim Meeting, the Committee changed the title of the item to better reflect the subject matter of the proposal.)

Source: Southern Weights and Measures Association (SWMA)

Discussion: The Committee reviewed the following proposal to amend the Cryogenic Liquid-Measuring Devices Code to recognize Liquefied Natural Gas (LNG) applications.

Amend paragraphs A.2. (c) and (d) as follows:

A.2. - This code does not apply to the following:

- (a) Devices used for dispensing liquefied petroleum gases (for which see Sec. 3.32; Code for Liquefied Petroleum Gas and Anhydrous Ammonia Liquid-Measuring Devices).
- (b) Devices used solely for dispensing a product in connection with operations in which the amount dispensed does not affect customer charges.
- (c) Devices used solely for dispensing liquefied natural gas.
- (d) mass flow meters (see Sec. 3.37. Code for Mass Flow Meters) (Added 199X)

Add the following paragraphs and Table to correspond to the Mass Flow Meters Code: (These paragraphs are copied from S.2.4., S.2.6.2., and S.2.7.)

S.2.X. Provisions for Power Loss.

S.2.X.1 Transaction Information. - In the event of a power loss, the information needed to complete any transaction in progress at the time of the power loss (such as the quantity and unit price, or sales price) shall be determinable for at least 15 minutes at the dispenser or at the console if the console is accessible to the customer.
(Added 199X)

S.2.X.2. User Information. - The device memory shall retain information on the quantity of fuel dispensed and the sales price totals during power loss.
(Added 199X)

S.2.X.X. Display of Quantity and Total Price. - When a delivery is completed, the total price and quantity for that transaction shall be displayed on the face of the dispenser for at least 5 minutes or until the next transaction is initiated by using controls on the device or other user-activated controls.
(Added 199X)

S.2.X. Recorded Representations, Point of Sale Systems. - The sales information recorded by cash registers when interfaced with a retail motor-fuel dispenser shall contain the following information for products delivered by the dispenser:

- (a) the total volume of the delivery,
- (b) the unit price,
- (c) the total computed price, and
- (d) the product identity by name, symbol, abbreviation, or code number.
[Nonretroactive as of January 1, XXXX.]
(Added 199X)

S.2.X. Indication of Delivery. - The device shall automatically show on its face the initial zero condition and the quantity delivered (up to the nominal capacity).

However, the first 0.03 L (0.009 gal) of a delivery and its associated total sales price need not be indicated.

[Nonretroactive as of January 1, XXXX]
(Added 199X)

Amend paragraph S.2.5. Provision for Sealing as follows:

S.2.5. Provision for Sealing. - Adequate provision shall be made for an approved means of security (e.g., data change audit trail) or physically applying security seals in such a manner that no adjustment or interchange may be made of:

- (a) any measurement element;
- (b) any adjustable element for controlling delivery rate when such rate tends to affect the accuracy of deliveries; ~~and or~~
- (c) ~~any automatic temperature or density compensating system~~ the zero adjustment mechanism.

Any When applicable, the adjusting mechanism shall be readily accessible for purposes of affixing a security seal.

Audit trails shall use the format set forth in Table S.2.5.
(Added 199X)

Add new paragraphs S.1.1.2.X. Liquefied Natural Gas Used as an Engine Fuel and S.1.X. Liquefied Natural Gas Dispensers as follows:

S.1.1.2.X. Liquefied Natural Gas Used as an Engine Fuel - When liquefied natural gas is dispensed as an engine fuel, the delivered quantity shall be indicated and recorded, if the device is equipped to record, in liters or gallons and decimal subdivisions or fractional equivalents thereof.
(Added 199X)

S.1.X. Liquefied Natural Gas Dispensers. - Except for fleet sales and other price contract sales, a liquefied natural gas dispenser used to refuel vehicles shall be of the computing type and shall indicate the quantity, the unit price, and the total price of each delivery. The dispenser shall display the volume measured for each transaction either continuously on an external or internal display accessible during the inspection and test of the dispenser, or display the quantity in volume units by using controls on the device.

| Table T.1. Accuracy Classes for Cryogenic Meter Applications | | | |
|---|---|-----------------------------|------------------------------|
| Accuracy Class | Application | Acceptance Tolerance | Maintenance Tolerance |
| <u>2.0</u> | <u>Liquefied natural gas as a motor fuel</u> | <u>1.5%</u> | <u>2.0%</u> |
| <u>2.5</u> | <u>Bulk delivery of cryogenic liquids</u> | <u>1.5%</u> | <u>2.5%</u> |

Discussion: SWMA believes the proposal to include liquefied natural gas (LNG) applications in the Cryogenic Liquid-Measuring Devices Code has merit but warrants further development. SWMA heard comments from Hoffer Flow Controls Inc. which believes that LNG may have been excluded from the Cryogenic Code because of questions regarding LNG's composition. Hoffer noted that liquid densities have far less variation than gas densities, even when methane content differs. Hoffer Flow Controls, Inc. also believes that there is nonuniformity in the measuring devices codes and that cryogenic meters are held to more stringent standards. Hoffer noted that currently no type of retail dispensers are capable of determining a product's composition.

The Meter Manufacturers Association believes that LNG is clearly a cryogenic fluid based on Handbook 44 and 130 definitions, and no technical reasons exist to exclude LNG from the code.

One NTEP laboratory indicated some concern that paragraph S.2.4. Automatic Temperature or Density Composition in the 1999 edition of Handbook 44 may not include all of the parameters that meters need to compensate for when delivering an impure product such as LNG. The composition of LNG is unlike other cryogenic liquids such as oxygen, which is a purer product. Additional comments indicated that LNG may be more appropriate for motor-fuel applications. The Committee discussed the appropriate unit of measurement because the code has no mass units, and understood that industry does not plan to ask for a volume conversion unit such as the gasoline gallon equivalent. The mass units were removed from the Cryogenic Code after the NCWM adopted the Mass Flow Meter Code.

NIST OWM noted that NIST's Boulder facility's earlier studies demonstrated inaccuracies with turbine meter registration when internal components appeared to freeze up. One OWM representative questioned whether or not proposed paragraph S.1.X. intends for indications to be part of an external or internal display.

The Committee believes there is insufficient data to demonstrate that all cryogenic liquid-measuring devices can accurately measure LNG. The Committee also wanted to ensure that the codes are kept uniform and to ensure that the recognition of LNG metering in Handbook 44 is not restricted to a single technology. The Committee gave this item developing status to allow more time to study these issues.

During the 1999 Annual Meeting, the Committee noted that it is waiting for California NTEP Participating Laboratory's recent data, which will provide information about product conversion tables. Hoffer Flow Controls, Inc. noted that the Society of Automotive Engineers is working on metering products where product composition is an issue.

337 Mass Flow Meters Code

337-1 VC S.3.3. Vapor Elimination, Table T.2. Accuracy Classes for Mass Flow Meter Applications, and N.6. Testing Procedures

(This item was adopted as part of the consent calendar.)

Source: Southern Weights and Measures Association

Recommendation: Modify paragraph S.3.3. Vapor Elimination and Table T.2. Accuracy Classes for Mass Flow Meter Applications, and add a new paragraph N.6. Testing Procedures:

S.3.3. Vapor Elimination. - A liquid-measuring instrument or measuring system shall be equipped with an effective gas extractor vapor or air eliminator or other effective means, automatic in operation, to prevent the measurement of vapor and air. ~~that results in errors greater than the tolerance for the minimum measured quantity (See N.1.).~~ Vent lines from the air or vapor eliminator shall be made of metal tubing or some other suitable rigid material.

Table T.2. Accuracy Classes for Mass Flow Meter Applications

| Accuracy Class | Application or Commodity Being Measured | Acceptance Tolerance | Maintenance Tolerance | Special Tolerance |
|----------------|--|----------------------|-----------------------|-------------------|
| 0.3 | Loading rack meters, vehicle-tank meters, home heating oil, milk and other food products, large capacity motor-fuel dispensers (maximum discharge flow rates greater than 100 L or 25 gallon per minute), all other liquid applications not shown in the table where the minimum delivery is at least 700 kg (1500 lb) | 0.2% | 0.3% | <u>0.5%</u> |
| 0.5 | Small capacity (retail) motor-fuel dispensers, agri-chemical liquids, all other liquid applications not shown in the table | 0.3% | 0.5% | <u>0.5%</u> |
| 1.0 | Anhydrous ammonia, LP Gas (including vehicle tank meters) | 0.6% | 1.0% | <u>1.0%</u> |
| 2.0 | Compressed natural gas as a motor fuel | 1.5% | 2.0% | <u>2.0%</u> |
| 2.5 | Cryogenic liquid meters, liquefied compressed gases other than LP Gas | 1.5% | 2.5% | <u>2.5%</u> |

N.6 Testing Procedures.

N.6.1. Normal Tests. - The normal test of a meter shall be made at the maximum discharge rate developed by the installation. Any additional tests conducted at flow rates down to and including the rated minimum discharge flow rate shall be considered normal tests.

N.6.2. Special Tests. - Special tests to develop the operating characteristics of a meter and any special elements and accessories attached to or associated with the device, shall be made as circumstances require. Any test except as set forth in N.6.1. shall be considered a special test. Special test of a measuring system shall be made to develop operating characteristics of the measuring systems during a split compartment delivery. (See Table T.2.)

Discussion: NIST Handbook 44 paragraph S.3.3. requires a mass flow metering system to be equipped with an effective means to prevent the measurement of vapor or air, which results in meter errors outside of allowable tolerances. To determine the air eliminator's effectiveness, vehicle-mounted mass flow meters are subjected to a split compartment test. During type evaluation, these systems are held to acceptance tolerance regardless of the nature of the test. Examination procedures for other devices recognize that properly designed, installed, and maintained systems may permit a small amount of air/vapor to pass through the meter. Other device systems are allowed a more liberal tolerance for special tests such as split compartment test.

The Meter Manufacturers Association believes that the proposal above aligns the requirements for mass flow meter technology with those for other liquid-measuring devices.

The Committee believes that the intent of the proposed wording in paragraph S.3.3 is to limit mass flow meter performance to the inaccuracies listed in Table T.2. The new text corresponds to the language in other code sections and clarifies that special tolerances apply during the split compartment and other special tests.

Modified paragraph S.3.3. addresses only the split compartment test. The Committee believes it is important that requirements are consistent with other Handbook 44 codes, consequently, the Committee modified the proposal to include provision for requiring an effective vapor or air eliminator rather than a gas extractor and to specify requirements for vent line materials. The Committee believes that the NCWM may eventually revisit this issue to extend special tolerances to all special tests to align the Mass Flow Meters Code with other code special requirements.

337-2 V Table S.3.5. Categories of Device and Methods of Sealing; Category 2

(This item was adopted.)

Source: Specifications and Tolerances Committee

Recommendation: In response to inquiries about how to apply the January 1, 2005, enforcement date for Category 2 devices, the Committee recommends modifying Table S.3.5. as follows:

Table S.3.5. Categories of Device and Methods of Sealing

| <i>Categories of Device</i> | <i>Method of Sealing</i> |
|--|--|
| <i>Category 1: No remote configuration capability.</i> | <i>Seal by physical seal or two event counters: one for calibration parameters and one for configuration parameters.</i> |
| <p><i>Category 2: Remote configuration capability, but access is controlled by physical hardware.</i></p> <p><i>The device shall clearly indicate that it is in the remote configuration mode and record such message if capable of printing in this mode or shall not operate while in this mode.</i></p> <p><i>[Category 2 applies only to devices manufactured prior to January 1, 2005. Devices with remote configuration capability manufactured after that date must meet the sealing requirements outlined in Category 3. Devices without remote configuration capability manufactured after that date will be required to meet the minimum criteria outlined in Category 1.]</i></p> | <p><i>[The hardware enabling access for remote communication must be on-site. The hardware must be sealed using a physical seal or an event counter for calibration parameters and an event counter for configuration parameters. The event counters may be located either at the individual measuring device or at the system controller; however, an adequate number of counters must be provided to monitor the calibration and configuration parameters of the individual devices at a location. If the counters are located in the system controller rather than at the individual device, means must be provided to generate a hard copy of the information through an on-site device.]*</i></p> <p><i>[*Nonretroactive as of January 1, 1996]</i></p> |
| <p><i>Category 3: Remote configuration capability access may be unlimited or controlled through a software switch (e.g., password).</i></p> <p><u><i>The device shall clearly indicate that it is in the remote configuration mode and record such message if capable of printing in this mode or shall not operate while in this mode.</i></u></p> <p><u><i>[Nonretroactive as of January 1, 2001]</i></u></p> <p><i>Category 3 will be modified in 2005 to apply to Nonretroactive as of January 1, 2005 all devices with remote configuration capability must comply with the sealing requirements of Category 3.</i></p> | <p><i>An event logger is required in the device; it must include an event counter (000 to 999), the parameter ID, the date and time of the change, and the new value of the parameter. A printed copy of the information must be available through the device or through another on-site device. The event logger shall have a capacity to retain records equal to ten times the number of sealable parameters in the device, but not more than 1000 records are required. (Note: Does not require 1000 changes to be stored for each parameter.)</i></p> |

[Nonretroactive and enforceable as of January 1, 1995.]
(Table added 1993) (Amended 1995 and 1998.)

Discussion: In 1998, the NCWM adopted changes to Table S.2.2. Categories of Device and Methods of Sealing which generated numerous questions about how to apply the enforcement date to Category 2 devices. After January 1, 2005, the NCWM intended for all devices with remote configuration capability to meet Category 3 sealing requirements. This requirement resulted in several interpretations about whether or not Category 2 devices in use on December 31, 2004, would comply after 2005.

Industry representatives who attended the 1998 NCWM indicated that only Category 1 or 3 devices were in use at that time. Therefore, Category 2 devices were expected to be phased out of use and any requirements that addressed Category 2 devices could “sunset.” The Committee recognized that the use of the term “sunset” contributed to the confusion about the status of Category 2 devices after January 1, 2005.

The Committee agreed that the original intent of the changes to Table S.2.2. was to require all new devices equipped with remote configuration to meet Category 3 requirements on the January 1, 2005 enforcement date. NCWM did *not* intend

that Category 2 devices equipped with remote configuration be modified to meet Category 3 requirements or be removed from service if they were operating in compliance prior to January 1, 2005. The Committee agreed that Table S.2.2. should have additional language to clarify the original intent of the changes.

The new requirements for all remotely configured devices to be Category 3 are nonretroactive. This requirement is *not* enforceable for (1) devices manufactured before January 1, 2005, or (2) new and used devices brought into a state before January 1, 2005. The new requirement is enforceable for remotely configured noncommercial devices placed into to a commercial application on or after January 1, 2005.

The Committee expressed concern that having remote access to change sealable parameters might facilitate fraud. Consequently, the Committee added text to Table S.2.2. to require some indication that Category 3 devices are in the configuration mode. Industry is cautioned that there may be instances where Category 2 devices manufactured prior to January 1, 2005 are prohibited from sale if brought into a state after the effective date.

The Meter Manufacturers Association supports the proposal.

At the 1999 Annual Meeting, the Committee heard comments from meter manufacturers that the proposed January 1, 2000, enforcement date provided insufficient time to comply. Consequently, the Committee changed the enforcement date for Category 3 devices to indicate a calibration or configuration mode to January 1, 2001.

For additional background information on this item refer to the Committee's 1997 and 1998 final reports in NIST Special Publications 920 and 932, respectively.

337-3 W S.6.1. Printed Receipt; Identification Number

(This item was withdrawn.)

Source: National Type Evaluation Technical Committee Measuring Sector

Discussion: The Committee reviewed a proposal to add the following language to paragraph S.6.1.:

S.6.1. Printed Receipt. - Any delivered, printed quantity shall include an identification number for a specific meter or measuring element, the time and date, and the name of the seller. This information may be printed by the device or pre-printed on the ticket.

The original language in paragraph S.6.1. was taken from OIML R 105 Direct Mass Flow Measuring Systems for Quantities of Liquids recommendations for printers; however, R 105 contains no specific language to clarify what the identification number is intended to represent.

NTEP Participating Laboratories noted that paragraph S.6.1. requirement for an identification number on mass flow meter receipts is unclear. Questions were raised about whether or not this information is associated with the owner, a specific device, or a specific transaction. NIST-OWM was asked to develop language which described what information an identification number should encompass; this language appears in the recommendation above.

The Southern Weights and Measures Association stated that they believe that paragraph S.6.1. Printed Receipt is confusing and open to misinterpretation. The SWMA believes that they thought the identification number requirement refers to a particular receipt rather than to a specific device.

The Meter Manufacturers Association was concerned that the proposed language may need further clarification to avoid situations where manufacturers must guess at the origin of the number. The MMA asked if this requirement refers to invoice, batch, or serial numbers.

The Committee encouraged industry to provide feedback from industry on the ability of devices to meet the proposed change to paragraph S.6.1. The Committee believes that this information is necessary at installations which have multiple devices in operation.

Discussions with a NIST OIML representative indicate that the intent of the identification number was to identify a specific device. The Committee agreed with the OIML interpretation of identification number information on printed receipts. The Committee also believes an identification number is any combination of "alphanumeric characters that give a unique identification of the transaction; if the combination of date, time, and seller information is not sufficient, then an identification of the measuring system is to be added." The Committee believes transaction information appears on receipts, therefore, the item status was changed from informational to withdrawn.

337-4 VC T.1. (b) Tolerances, General and Table T.2. Accuracy Classes for Mass Flow Meter Applications

(This item was adopted as part of the consent calendar.)

Source: Southern Weights and Measures Association

Recommendation: Modify paragraph T.1.(b)Tolerances, General and Table T.2. Accuracy Classes for Mass Flow Meter Applications, and add a New Accuracy Class 0.3A for asphalt to Table T.2.:

T. Tolerances

T.1. Tolerances, General.

- (a) **The tolerances apply equally to errors of underregistration and errors of overregistration.**
- (b) **The tolerances apply to all products at all temperatures ~~between -10 C to +50 C,~~ inclusive, measured at any flow rate within the rated measuring range of the meter.**

T.2. Tolerances. - The tolerances for mass flow meters for specific liquids, gases, and applications are listed in Table T.2.

(Amended 1994)

Table T.2. Accuracy Classes for Mass Flow Meter Applications

| Accuracy Class | Application or Commodity Being Measured | Acceptance Tolerance | Maintenance Tolerance |
|----------------|---|----------------------|-----------------------|
| 0.3 | Loading rack meters, vehicle-tank meters, home heating oil, <u>heated products (except asphalt) above 50 °C, asphalt below 50 °C</u> , milk and other food products, large capacity motor-fuel dispensers (maximum discharge flow rates greater than 100 L or 25 gallon per minute), all other liquid applications not shown in the table where the minimum delivery is at least 700 kg (1500 lb) | 0.2% | 0.3% |
| <u>0.3A</u> | <u>Asphalt above 50 °C</u> | <u>0.3</u> | <u>0.3</u> |
| 0.5 | Small capacity (retail) motor-fuel dispensers, agri-chemical liquids, all other liquid applications not shown in the table | 0.3% | 0.5% |
| 1.0 | Anhydrous ammonia, LP Gas (including vehicle tank meters) | 0.6% | 1.0% |
| 2.0 | Compressed natural gas as a motor fuel | 1.5% | 2.0% |
| 2.5 | Cryogenic liquid meters, liquefied compressed gases other than LP Gas | 1.5% | 2.5% |

(Added 1994)

Discussion: Discussions at the 1998 meetings of the National Type Evaluation Technical Committee Measuring Sector and Southern Weights and Measures Association (SWMA) show that there is confusion about which tolerances apply for mass flow meters used to deliver asphalt paving material. SWMA's original proposal recommended a tolerance of 0.5 percent for asphalt applications, which appeared to be a tolerance used by various industry sectors. Currently, asphalt is designated as Accuracy Class 0.3 with a 0.2 percent acceptance and 0.3 percent maintenance tolerance in the Mass Flow Meter Code, which is consistent with tolerances in the Liquid-Measuring Devices Code for Other Liquids. Field officials and manufacturers report that, due to the nature of the product, the scale division size of the reference standard, and the influence of weather conditions on scale readings, the 0.3 Accuracy Class tolerances are very difficult to attain.

The Meter Manufacturers Association opposed the proposed tolerance of 0.5 percent because they are less stringent than the tolerances for Liquid Measuring Devices in paragraph T.2.3.2. and vehicle scales.

The Committee changed the original text since there are two types of asphalt; one heated above 50 °C and another below that temperature. The Committee also modified the original proposal to change the tolerances in Table T.2. for asphalt applications from 0.5 percent to 0.3 percent because these tolerances are more appropriate based on the tolerances that are required of competing technologies in the same application. The Committee also modified the text which addresses the application for all other products outside the -10 to +50 °C range to clarify the types of products covered by the 0.3 Accuracy Class application.

354-1 V

S.1.9. Design of Recording Elements

(This item was adopted.)

Source: Northeastern Weights and Measures Association**Recommendation:** Modify paragraph S.1.9. as follows:

Designate part (d) of the paragraph as non-retroactive. The proposed changes will read as follows:

S.1.9. Design of Recording Elements Recorded Representation, - A recording element shall be equipped to record date, time, distance traveled and fare. On a printed receipt issued from a taximeter, whether through an integral or separate recording element, shall include the following: equipped with extras indications, the recording element shall also record extras.

- (a) date
- (b) unique vehicle identification number, such as the medallion number, taxi number, vehicle identification number (VIN) or permit number*
- (c) start and end time of trip*
- (d) distance traveled, maximum increment of 0.1 kilometer (0.1 mile)*
- (e) fare in \$
- (f) for multi-rate taximeters, each rate at which fare was computed and the associated fare at that rate*
- (g) additional charges where permitted such as extras, surcharge, telephone use, tip and tax shall be identified and itemized*
- (h) total fare in \$ (total charge)*
*[Nonretroactive as of January 1, 1989.] *[Nonretroactive as of January 1, 2000]*
 (Added 1988)

Discussion: NEWMA noted that many taximeters are equipped with recording elements which record information beyond the date, time, and fare which is required in current Handbook 44 paragraph S.1.9. The correct recording of transaction information provides a deterrent to fraud. For instance, printed receipts which contain "distance traveled" information discourages unnecessary detours. Many jurisdictions also require an assessment of taxes on each fare; however, the receipt may not provide this information.

The Central Weights and Measures Association (CWMA) was concerned that jurisdictions will consider the financial impact of retrofitting devices and make exceptions to this requirement as the enforcement date approaches. Based on similar occurrences where jurisdictions have granted exclusions, the CWMA recommended that the proposal become a nonretroactive requirement.

The Southern Weights and Measures Association believes this proposal has merit; however, it needed input from the taximeter manufacturers and Participating NTEP Laboratories.

Weights and Measures officials felt that taximeters could be classified as point-of-sales (POS) registers and, like other POS applications, a printed receipt should be required.

The Committee believes that the requirement for additional ticket information has merit because of the complex fares and options of today's taximeters and the general unfamiliarity of customers with the basis for the fare. The Committee believes there are numerous acceptable sources for the vehicle identification and included specific sources of that information in paragraph (b). Initially, the Committee agreed that the proposed additional information should be a retroactive requirement. In closed session at the 1999 Annual Meeting, the Committee discussed the difficulties

jurisdictions and device operators encountered when retroactive requirements are enforced. The Committee agreed that all the proposed recorded information, except for paragraph (a) date and (e) fare, should be added as nonretroactive requirements.

354-2 I S.1.10. Non-Fare Information

Source: Northeastern Weights and Measures Association

Discussion: The Committee reviewed a proposal to add the following new paragraph S.1.10. Non-fare Information to the Taximeter Code.

S.1.10. Non-fare Information. - The fare and extras displays may be used to display auxiliary information provided the meter is in the vacant condition and such information is only displayed for five seconds, or less. If the information consists of a list of information, the list may be displayed one item after another, provided that each item is displayed for five seconds, or less.
[Nonretroactive as of January 1, XXXX]

NTEP Participating Laboratories received requests to evaluate taximeters that are equipped with indicators which are capable of using the fare and extra display to indicate other special features. Numerous special and optional features, such as a clock or recall of vehicle/transaction statistical information (stats), are incorporated into the design of newer electronic taximeters. There is concern that when customers see this information they may be confused about which values represent the fares and extras. To avoid confusion about the displayed values, the proposed new paragraph S.1.10. would limit the display of special feature information to: (1) 5 seconds or less, and (2) only when the taximeter is cleared (not registering, vacant). For taximeters which are capable of displaying vehicle or transaction stats, the instrument may scroll through the statistics; however, the display of each stat is limited to five seconds.

The Central Weights and Measures Association supported this proposal as it is written.

The Southern Weights and Measures Association believes this proposal has merit; however, the proposed changes to the Taximeter Code need to be clarified by the taximeter manufacturers and Participating NTEP Laboratories.

During the 1999 Interim Meeting, the Committee heard questions about whether or not it is necessary for the meter to be in the vacant mode when displaying non-fare information. NEWMA representatives indicated concern because the next customer who enters the vehicle may assume the non-fare information represents some part of their transaction. Industry representatives indicated that the proposed length of time is too short to record or tabulate displayed information. Consequently, the Committee made this an informational item to allow additional study on the time limits.

During the 1999 Annual Meeting, the Committee agreed that when a taximeter is not in use, auxiliary information may be displayed; however, displays are examined on an individual basis to ensure all information is clear, appropriate, and do not facilitate fraud. The Committee heard comments that the proposed time limit of 5 seconds is not sufficient to view the information. The Committee asks that interested parties and members of the taxi industry provide input on alternative time limits.

354-3 VC S.1.9.1. Multiple Recorded Representations, S.1.9.1.1. Duplicate Receipts

(This item was adopted as part of the consent calendar.)

Source: Northeastern Weights and Measures Association (NEWMA)

Recommendation: Add a new paragraph S.1.9.1. Duplicate Receipts:

S.1.9.1.1. Duplicate Receipts. - A recording element may produce a duplicate receipt for the previous transaction provided the information printed is identical to the original with the exception of time issued. The duplicate receipt shall include the words "duplicate" or "copy." The feature to print a duplicate receipt shall be deactivated at the time the meter is hired for the next fare.
[Nonretroactive as of January 1, 2000]

Discussion: NEWMA found that there are taximeter recording elements which can print duplicate receipts. Manufacturers indicated that this is necessary because paper jams result in unusable receipts. The NEWMA

recommendation required that this feature be operable only when the information on the duplicate receipt is identical to that of the original transaction. Additionally, the proposal recommended that this function be deactivated at the start of the next fare.

The Southern Weights and Measures Association noted this proposal has merit; however, SWMA believes the taximeter manufacturers and NTEP Participating Laboratories needed to clarify the need for the proposed changes.

The Committee noted that the ability to print duplicate receipts is not limited to taximeters and does exist in a variety of devices. To ensure that duplicate receipts do not facilitate fraud, printers should indicate that the ticket is a "duplicate." Therefore, the Committee recommended that the NCWM adopt this paragraph and a similar proposal be added to the General Code (see Item 310-3.)

The Committee understood that the time printed on the initial and duplicate receipts will vary because of the different times when the printing might occur.

354-4 I S.5. Provisions for Security

Source: Northeastern Weights and Measures Association (NEWMA)

Discussion: The Committee discussed a proposal to make the following modifications to paragraph S.5. Provision for Security Seals.

S.5. Provision for Security Seals. - Adequate provision shall be made ~~for affixing to provide security seals to~~ for a taximeter. Security may be provided either by:

(a) Affixing security seals to the taximeter and to ~~all other parts components~~ required for service operation of a complete installation on a vehicle, so that no adjustments, alterations, or replacements affecting accuracy or indications of the device or the assembly can be made without mutilating the seal or seals; or

(b) Using a combination of security seals described in paragraph (a), and, in the case of a component that may be removed from a vehicle (e.g., slide mounting the taximeter), providing a physical or electronic link between components affecting accuracy or indications of the device to ensure that its performance is not affected and operation is only permitted with those components having the same unique properties.

The sealing means shall be such that it is not necessary to disassemble or remove any part of the device or of the vehicle to apply or inspect the seals.
(Amended 1988)

NEWMA noted that many taximeters are mounted on a slide bracket permitting easy removal of the meter, and providing for safe overnight storage. This type of mount conflicts with the requirements in paragraph S.5. Provisions for Security Seals. The "slide-mount" installation also allows taximeters to be installed in vehicles other than the vehicle where it was calibrated. The necessity to provide taximeters with anti-theft features is understandable; however, no security feature should affect the integrity of the measurement process. Therefore, it was recommended that S.5. be modified to recognize that either: (1) a taximeter may be permanently attached to a vehicle such that there must be a physical security seal; or (2) the taximeter component may be removable requiring an electronic seal that permits operation with only one specific vehicle or bracket. NEWMA recommended that this proposal be a retroactive requirement applicable to all taximeters.

The Central Weights and Measures Association supported the original NEWMA proposal. NEWMA originally proposed the following changes to paragraph S.5:

S.5. Provision for Security Seals. - Adequate provision shall be made to provide security for the taximeter, either by ~~for affixing security seals to a taximeter and to other parts required for service operation of a complete installation on a vehicle, so that no adjustments, alterations, or replacements affecting accuracy or indications of the device or the assembly can be made without mutilating of the seal or seals or by providing a physical or electronic link between components affecting accuracy or indications of the device or assembly which permits operation of the device~~

~~only with those unique components. The sealing means shall be such that it is not necessary to disassemble to remove any part of the device or of the vehicle to apply or inspect the seals.~~
(Amended 1998)

The Southern Weights and Measures Association noted that this proposal has merit; however, they asked that taximeter manufacturers and Participating NTEP Laboratories provide input to clarify the exact need for the proposed changes to the Taximeter Code.

The Committee believes that technology to meet the electronic sealing requirements in the proposal is available. The sealing technology is similar to that used to prevent theft of car and home radios. Devices are programmed to recognize specific codes and to interface only with selected components. The Committee is uncertain how device repairs can be conducted without compromising the security, unless the meter is returned to the factory for reprogramming. There are also concerns that taximeters will be installed without being calibrated. Based on these comments and to allow for additional input on these issues, the Committee made this an informational item.

354-5 I S.6. (b) Power Interruption, Electronic Taximeters

Source: Northeastern Weights and Measures Association (NEWMA)

Discussion: The Committee considered the following proposal to modify paragraph S.6. (b) Power Interruption, Electronic Taximeters.

S.6. Power Interruption, Electronic Taximeters.

(a) After a power interruption of 3 seconds or less, the fare and extras indications shall return to the previously displayed indications and may be susceptible to advancement without the taximeter being cleared.

(b) After a power interruption exceeding 3 seconds, the fare and extras indications shall return to the previously displayed indications and shall not be susceptible to advancement until the taximeter is cleared.

*After restoration of power following an interruption exceeding 3 seconds, the previously displayed fare shall be displayed for a maximum of 3 minutes at which time the fare shall automatically clear and the taximeter return to the vacant condition.**

**[Nonretroactive as of January 1, XXXX]*

[Effective and nonretroactive as of January 1, 1994. Retroactive after January 1, 1999.]

(Added 1988)(Amended 1989 and 1990)

The requirement for long-term power interruption in paragraph S.6.(b) has no limits on how long the indications must be displayed after a power loss. There is concern that the next customers who enter the vehicle may assume the previous transaction information returning to the display screen after a power loss represents some part of their transaction. NEWMA recommended a limit on the time a previous fare is displayed when power returns.

During the 1999 Interim Meeting, the Committee heard comments that, unlike other devices which rely on the local utility for uninterrupted operation, taximeters depend on the vehicle battery for a power source. The Committee recognized the likelihood of an unintentional power interruption is less for taximeters; however, taximeters must not be installed or designed so that power interruption is a selectable feature. Based on these comments, the Committee gave this item informational status to allow additional time for input from weights and measures officials and the taximeter industry.

354-6 VC UR.3. Statement of Rates

(This item was adopted as part of the consent calendar.)

Source: Northeastern Weights and Measures Association (NEWMA)

Recommendation: Modify paragraph UR.3. Statement of Rates as follows:

UR.3. Statement of Rates. - The distance and time rates for which a taximeter is set, including the initial distance interval and the initial time interval, the local tax rate, and the schedule of extras when an extras indication is provided, shall be conspicuously displayed inside the front and rear passenger compartments. The words "Rate," "Rates," or "Rates of Fare" shall precede the rate statement. The rate statement shall be fully informative, self-explanatory, and readily understandable by the ordinary passenger, and shall either be of a permanent character or be protected by glass or other suitable transparent material. (Amended 1977, 1988, and 1990)

Discussion: Many jurisdictions assess a sales tax on taximeter transactions. NEWMA proposed that paragraph UR.3. be modified to require tax rate information to be conspicuously displayed along with other information that affects the final transaction amount. NEWMA also recommended that the recording element record the tax information. (See Item 354-1).

The Committee reviewed the definition of extras, which encompasses charges that are in addition to the fare. The definition does not mention taxes based on the fare or other charges. Tax rates apply during or after the fare has ended. The Committee felt that it is important that the customer have all the transaction information available prior to the start of the fare. Consequently, the Committee recommended adopting changes as noted.

354-7 W UR.4. Return of Indicating and Recording Elements to Zero Condition

(This item was withdrawn.)

(This item was added to the Committee's agenda as a result of discussions during the Interim Meeting.)

Source: Specifications and Tolerances Committee

Discussion: The Committee reviewed the following proposal to add new paragraph UR.4. Return of Indications and Recording Elements to Zero Condition to the Taximeter Code.

UR.4. Return of Indicating and Recording Elements to Zero – On any taximeters, the primary indicating element, and recording element if so equipped, shall return to a zero condition before the start of a fare.

After discussing the retention of the fare after a power loss, the Committee discussed an additional requirement to ensure that taximeters start each new fare at zero. The proposal for taximeter indications to return to a zero condition is consistent with the requirement in other code sections for the primary indicating and recording element to return to zero.

The Committee noted that taximeters are designed to start with the initial drop fare; therefore, the proposal to start at zero is not an appropriate requirement for this type of device. Therefore, the Committee changed the item from informational to withdrawn status.

357 Near-Infrared Grain Analyzers – Tentative Code

357-1 VC Near-Infrared Grain Analyzers – Tentative Code; Retroactive Dates

(This item was adopted as part of the consent calendar.)

Source: Near-Infrared Grain (NIR) Analyzer Sector

Recommendation: Remove all retroactive dates and change the effective date for all January 1, 2000 nonretroactive dates to January 1, 2002.

Discussion: The following discussion is excerpted from the 1998 Sector Summary.

At the 1997 Sector meeting, members raised questions regarding the January 1, 2000 enforcement dates and the January 1, 2005 retroactive dates in the Tentative Code. The Sector had previously agreed that effective dates could be changed if necessary.

The Sector was reminded that the NIR Analyzer Code is still "tentative" having only trial or experimental status and not intended to be enforced. The requirements are designed for study prior to developing and adopting of a final Code. Except for a study conducted by Nebraska, the Sector has not received feedback from the weights and measures community on the practical experience of field inspections using the tentative code. The Sector agreed that the increasing number of instruments coming into the field creates a need for requirements to regulate NIR Analyzers. This is an ideal time for States to actively study the code to determine if it needs modification before the Sector recommends upgrade to a permanent code.

Weights and measures representatives expressed a need for additional training in using the various models of NIR analyzers they might encounter in field testing. The ability to verify calibrations is especially important. Many of the devices in the field predate the Tentative Code and do not have some of the features which the Code requires (such as the ability to print the calibration identifier on the results ticket).

The Sector generally agreed they should focus on moving the Code from "tentative" to "permanent" status regardless of the NTEP program moving forward. Most members agreed that, unless retroactive dates were removed, the NCWM would not accept the Code as permanent. The nonretroactive date of January 1, 2000 was thought to be premature because thorough study of the tentative code will not be completed until late 1999. Members were reluctant to suggest a date that would be too far in the future believing that it is important to have an enforceable code as soon as possible.

The Sector unanimously agreed that retroactive dates should be removed and that the nonretroactive date of January 1, 2000, should be changed to January 1, 2002.

The Central and Northeastern Weights and Measures Associations supported this proposal.

The Southern Weights and Measures Association (SWMA) recognized that the effective dates are approaching while the code still has a tentative status. SWMA supported this proposal.

The Committee heard no unfavorable comments on this issue.

357-2 I Near-Infrared Grain Analyzer; Indication of Additional Constituent Values

Source: Near-Infrared Grain Analyzer Sector

Discussion: The Committee reviewed the following proposal to modify the Near-Infrared Grain (NIR) Analyzer Code to recognize tests for corn protein, oil, and starch, barley protein, and soybean protein and oil.

S.1. Design of Indicating, Recording, and Measuring Elements.

S.1.1. Digital Indications and Recording Elements.

- (a) *Analyzers shall be equipped with a digital indicating element.*
- (b) *The minimum height for the digits used to display constituent values shall be 10 mm.*
- (c) *Analyzers shall be equipped with a communication interface that permits interfacing with a recording element and transmitting the date, grain type or class, constituent values, and calibration version identification.*
- (d) *A digital indicating element shall not display, and a recording element shall not record, any constituent value before the end of the measurement cycle.*
- (e) *Wheat protein content shall be recorded and displayed as percent protein reported on a constant moisture basis of 12 percent wet basis. Constituent content shall be recorded and displayed as percent of total mass using the moisture basis specified in Table S.1.1.(e).*
- (f) *An analyzer shall not display or record any constituent value that is beyond the operating range of the device unless the constituent value representation includes a clear error indication (and recorded error message with the recorded representation).*

[Nonretroactive and effective as of January 1, 2000. To become retroactive as of January 1, 2005.]

S.1.2. Selecting Grain Class and Constituent. - Provision shall be made for selecting, and recording the type or class of grain and the constituent(s) to be measured. The means to select the grain type or class and constituent(s) shall be readily visible and the type or class of grain and constituent(s) selected shall be clearly and definitely identified in letters (such as **HRWW**, **HRSW**, etc. or **PROT**, etc.). A symbol to identify the display of the type or class of grain and constituent(s) selected is permitted provided that it is clearly defined adjacent to the display. Minimum acceptable abbreviations are listed in Table S.1.2. Meters shall have the capability (i.e., display capacity) of indicating the grain type using a minimum of four characters in order to accommodate the abbreviations listed in Table S.1.2.

[Nonretroactive and effective as of January 1, 2000. To become retroactive January 1, 2005.]

Add a new Table S.1.1.(e) Constant Moisture Basis for Constituent Display and Recording:

| Table S.1.1.(e) Constant Moisture Basis for Constituent Display and Recording | | |
|--|--------------------------|-----------------------|
| Grain Type or Class | Constituent(s) | Moisture Basis |
| Durum Wheat, Hard Red Spring Wheat, Hard Red Winter Wheat, Hard White Wheat, Soft Red Winter Wheat, Soft White Wheat | Protein | 12 percent |
| Soybeans | Protein Oil | 13 percent |
| Two-rowed Barley Six-rowed Barley | Protein | 0 percent (dry basis) |
| Corn | Protein Oil Starch | 0 percent (dry basis) |

Modify Table S.1.2. Grain Types Considered for Type Evaluation and Calibration and Minimum Acceptable Abbreviations:

| Table S.1.2. Grain Types Considered for Type Evaluation and Calibration and Minimum Acceptable Abbreviations | |
|--|---------------------------------|
| Grain Type | Minimum Acceptable Abbreviation |
| Durum Wheat | DURW |
| Hard Red Spring Wheat | HRSW |
| Hard Red Winter Wheat | HRWW |
| Hard White Wheat | HDWW |
| Soft Red Winter Wheat | SRWW |
| Soft White Wheat | SWW |
| Soybeans | SOYB |
| Two-rowed Barley | TRB |
| Six-rowed Barley | SRB |
| Corn | CORN |

Modify paragraphs N.1.1. Field Inspection and N.1.2. Standard Reference Samples, Wheat:

N.1. Testing Procedures.

N.1.1. Field Inspection. - Whole grain samples shall be used as the official field inspection standards. Five samples per grain type or class shall be used to check instrument performance. Each sample will be analyzed once. One of the samples will be analyzed an additional four times

to test instrument repeatability. For ground grain instruments, the ground sample will be repacked four times. A new grind is not required.

~~Wheat-protein~~ Constituent values shall be assigned to test samples by the Grain Inspection, Packers and Stockyards Administration (GIPSA). Tolerances shall be applied to individual sample measurements, the average of individual measurements on each of the five test samples, and the maximum difference (range) in results for five analyses on one of the test samples.

N.1.2. Standard Reference Samples, ~~Wheat~~. -Reference samples used for field inspection purposes shall be clean and selected to reasonably represent the constituent range. These samples shall be selected such that the difference between ~~wheat-protein~~ constituent values obtained using the GIPSA standard reference method and an official GIPSA NIR ~~wheat-protein grain~~ analyzer does not exceed ~~0.3 one-half of the acceptance tolerance shown in Table T.2.~~ for individual test samples or ~~0.15 0.375 times the acceptance tolerance shown~~ for the average of five samples.

Modify Table T.2. to read as follows:

| Table T.2. Acceptance and Maintenance Tolerances for NIR Wheat <u>Protein Grain Analyzers</u> | | | | |
|--|----------------|------------------------------|------------------------------------|----------------------------------|
| Type of Grain | Constituent | Individual Samples (percent) | Average for Five Samples (percent) | Range for Five Retests (percent) |
| Durum Wheat, Hard Red Spring Wheat, Hard Red Winter Wheat, Hard White Wheat, Soft Red Winter Wheat, Soft White Wheat | protein | 0.60 | 0.40 | 0.40 |
| Soybeans | <u>protein</u> | <u>0.80</u> | <u>0.60</u> | <u>0.60</u> |
| | <u>oil</u> | <u>0.70</u> | <u>0.50</u> | <u>0.50</u> |
| <u>Two-rowed Barley</u> <u>Six-rowed Barley</u> | <u>protein</u> | <u>0.70</u> | <u>0.50</u> | <u>0.50</u> |
| <u>Corn</u> | <u>protein</u> | <u>0.80</u> | <u>0.60</u> | <u>0.60</u> |
| | <u>oil</u> | <u>0.70</u> | <u>0.50</u> | <u>0.50</u> |
| | <u>starch</u> | <u>1.00</u> | <u>0.80</u> | <u>0.80</u> |

Weights and measures representatives to the NIR Analyzer Sector reported that NIR Analyzers are beginning to appear in their jurisdictions. Much of the commercial usage is for corn and soybeans, which the present tentative code does not address. Grain industry representatives report that the industry increasingly contracts directly with the producer to obtain “enhanced value” grains. A growing demand for measuring protein and oil in multiple grain types exists.

Because an increasing number of NIR analyzers are being used commercially for grains not presently covered by the code, the Sector decided that it should modify the tentative code to cover additional grains as outlined in the recommendation above. Because the certification date for the NIR NTEP Lab has been indefinitely delayed, deciding how these additional grains should be handled in type approval was indefinitely postponed.

The Sector reviewed proposed changes to the NIR Analyzer Tentative Code to cover additional grains and oil seeds. Due to calibration difficulty, sunflower seed (oil type) was dropped from being considered at this time. The Sector noted that the proposed tolerances are roughly two times the standard deviation of the errors Grain Inspection, Packers and Stockyards Administration (GIPSA) has observed in their tests. A tolerance equivalent to three times the standard deviation was not used because reference samples will be prescreened to eliminate any which differ from the reference method by more than one-half of the acceptance tolerance when tested on an official GIPSA NIR grain analyzer (see Handbook 44 paragraph N.1.2.).

Based on industry comments that the requirements may be premature, the Committee gave this issue informational status.

358 Multiple Dimension Measuring Devices Code

358-1 VC T.7. Electric Power Supply

(This item was adopted as part of the consent calendar.)

Source: Multiple Dimension Measuring Devices Working Group

Recommendation: Add a new paragraph to read as follows:

T.7. Electric Power Supply. - Battery-operated instruments shall not indicate nor record values outside the applicable tolerance limits when battery power output is excessive or deficient.

Discussion: During its August 1998 meeting, the Multiple Dimension Measuring Devices (MDMD) Work Group expressed concern about the accuracy of low battery indications on devices which are capable of indicating when the battery power is not at optimal power levels. The work group proposed a requirement similar to power supply requirements found in other Handbook 44 codes (Sections 2.20, 2.22 and 2.24, paragraphs T.N.8.3.1.(b), T.7.3.1.(b) and T.7.3.1.(b) respectively).

The Central Weights and Measures Association (CWMA) acknowledged that several codes have this requirement; therefore, it may be appropriate to make this a general code requirement. CWMA also noted that the wording should be changed to clarify the intent of the requirement.

The Northeastern and Southern Weights and Measures Associations supported this proposal as written.

The Committee felt the proposal was consistent with the power requirements in other code sections for devices equipped with similar power sources. The Committee heard no unfavorable comments on this issue; therefore, it recommended this item for a vote.

360 Other Items

360-1 I Revise NIST Handbook 44

Source: Southern Weights and Measures Association (SWMA)

Discussion: The Committee held a lengthy discussion about a special project proposed to revise NIST Handbook 44 Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices.

SWMA recommended that work should begin to: (1) create a format that is easy to reference; (2) address newer technology; (3) facilitate uniform interpretation of the Handbook 44 requirements; and (4) be more user friendly. During the revision process, the SWMA asks that no restrictions be placed on how Handbook 44 is reformatted. The SWMA heard concerns about the difficulty that all levels of weights and measures officials and industry representatives have with interpreting Handbook 44. Therefore, the SWMA encouraged the NCWM S&T Committee to forward this proposal to the NCWM Board of Directors.

The Meter Manufacturers Association (MMA) supported revision of Handbook 44. The MMA recommended (1) funding be committed by the NCWM, (2) deadlines be established, (3) a project leader be assigned to each code section, (4) working committees be formed to consist of representatives of NIST, weights and measures officials representing each region, manufacturers, and end users of various technologies. The MMA felt that Handbook 44 should be (1) neutral to specific technologies, (b) follow a uniform format in all code sections, and (3) contain only specifications, notes, and user requirements. MMA believes technology related performance and all other issues should be addressed in Publication 14, National Type Evaluation Program Administrative Procedures, Technical Policy, Checklists, and Test Procedures.

The Committee asks that the NCWM Board of Directors (BOD) expedite the work to revise Handbook 44. The Committee believes that the BOD should first establish an acceptable format for Handbook 44. The Committee encourages the BOD to dedicate sufficient resources to accomplish this specific task. Additionally, the Committee recommends selecting a group or groups which represent all regional weights and measures associations, industry, and

Canada. The Committee cautioned that the group(s) selected should be of an optimal size to complete the task. Based on Committee members' work on other NCWM projects, they estimated that the group devote at minimum the equivalent of 4 total weeks to the task.

At the Committee's recommendation, the BOD appointed a work group to begin work to revise Handbook 44. In September 1999, the group, chaired by Ron Murdock, North Carolina, will meet at the Technical Meeting of the Western Weights and Measures Association in Olympia, Washington.

360-2 I International Organization of Legal Metrology (OIML) Report

At the July 1999 NCWM Annual Meeting, Deborah M. Ripley, NIST Technical Standards Activities (NIST-TSA), provided a report containing an update of the International Organization of Legal Metrology (OIML), and Asian-Pacific Legal Metrology Forum (APLMF) activities, and other international activities that are generally within the S & T Committee's purview. This report is found in Appendix A. For more information contact: Deborah M. Ripley by mail at NIST, 100 Bureau Drive STOP 2150, Gaithersburg, Maryland 20899; by telephone at 301-975-4859; by fax at 301-926-1559; or by E-mail at deborah.ripley@nist.gov. For additional information view the OIML web site at <http://www.oiml.org/>.

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Committee on Specifications and Tolerances

Appendix A (Item 360-2) **OIML Activities Report**

The OIML work program is organized into Technical Committees (TC) and Subcommittees (SC). There are two categories of OIML publications: (1) International Recommendations (R Document) which are model regulations that establish metrological characteristics and methods for assessing equipment conformity; and (2) International Documents (D Document) which are informative and intended to improve the work of metrological organizations. Initially a working draft (WD) is developed, next the document becomes a committee draft (CD), which is then followed by a draft revision (DR). The OIML Activities Report also covers the status of National Working Groups (NWG) and International Working Groups (IWG) in progress.

OIML SYMPOSIUM ON SOFTWARE

During October 1998, the International Committee on Legal Metrology (CIML) met in Seoul, Korea. The CIML voted to organize a special program to invite papers on software focusing on measuring instruments. The papers will be presented on September 30 and October 1, 1999, in Paris, France. For more information contact:

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INSTRUMENTS FOR MEASURING MASS AND DENSITY (TC 9) **(RESPONSIBILITY United States)**

WEIGHTS

TC 9/SC 3 R 111 Weights of classes E1, E2, F1, F2, M1, M2, and M3 (responsibility United States)

Status: R 33 "Conventional Value of the Result of Weighing in Air" is scheduled for withdrawal. A task group composed of the United States, France, and Germany will review and republish R 33 as a D document. The United States, France, and Germany will meet September 29, 1999 in Paris, France to develop the D document. Relevant sections of R 33 have been incorporated into R 111.

R 47 "Standard Weights for Testing of High Capacity Weighing Machines" is scheduled for withdrawal. The contents of R 47 have been incorporated into R 111.

R 52 "Hexagonal Weights (Ordinary Accuracy Class from 100 g to 50 g)" is scheduled for withdrawal. The contents of R 52 have been incorporated into R 111.

R 111 First Committee Draft (1st CD) Revision was prepared by the Secretariat (U.S.) and sent to the International Working Group (IWG) and the U.S. National Working Group (U.S./NWG) for comments. Comments on the 1st CD Revision were due back June 30, 1999. The Secretariat is currently collating the comments and will prepare a response. A 2nd CD will be prepared, based on the Secretariat's response to those comments.

LOAD CELLS

TC 9 R 60 Metrological Regulation for Load Cells (responsibility United States)

Status: In July 1998 at the NCWM Annual Meeting, a National Working Group Meeting was held in Portland, Oregon. Because there were no major issues with the 3rd CD of R 60, the Secretariat renamed the document to the First Draft Revision or 1st Draft Revision (DR) of R60. In August 1998, the 1st DR of R60 was sent to the Bureau of International Legal Metrology (BIML). BIML distributed the draft revision to the CIML and requested comments by the end of

January 1999. The comments were distributed to the Secretariat (U. S.). The Secretariat distributed those comments to the U.S./NWG. A 2nd DR of R 60 along with responses to the CIML comments were prepared and sent to BIML. The 2nd DR of R 60 has been incorporated into the 34th Meeting of the CIML, Item 11.3 for an approval of draft Recommendations.

On July 25, 1999, at the NCWM Annual Meeting, the U.S./NWG was scheduled to meet in Burlington, VT meeting to update the NWG on the Status of R 60.

NONAUTOMATIC WEIGHING INSTRUMENTS

TC 9/SC 1 R 76 Nonautomatic Weighing Instruments (responsibility Germany/France)

Status: On February 4, 1999 at the NCWM Interim Meeting, an U.S./NWG Meeting was held to discuss issues presented by participants.

On July 25, 1999 at the NCWM Annual Meeting, a U.S./NWG meeting was held in Burlington, VT.

AUTOMATIC WEIGHING INSTRUMENTS (Responsibility United Kingdom)

TC 9/SC 2 In-Motion Road Vehicle Weighing Instruments

Status: The last International Working Group (IWG) meeting was held in July 1997 to discuss the 2nd CD. In September 1998, concerns were raised on the Report on the Investigation into Test Procedures for In-Motion Road Vehicle Weighing Instruments and a Ballot Form on the report. Ballots were required to be returned to the U.K. by October 15, 1998.

In March, the U.S. received six items from the Secretariat (U.K.) on "Automatic Instruments for Weighing Road Vehicles in Motion." The items were as follows: (1) the 3rd CD (Part A); (2) September 1998 Ballot results; (3) September 1998 collated comments; (4) the Voting Form on the 3rd CD; (5) Ballot A; and (6) Ballot B.

Ballots A and B, and any comments on the above enclosures were to be returned by mail or fax by May 1, 1999. Few comments were received. The U.S. voted 'YES' on the following:

- (1) Question one, whether to draft the document in two parts (Part A for instruments which are approved for total vehicle weight only and Part B for additional requirements for indicating axle and axle group weights);
- (2) Question two, whether there is a need for requirements for approved instruments to indicate axle and axle group weights. This was Ballot A; and
- (3) 3rd CD (Ballot B)

The U.S. commented that it interprets that the 3rd CD does not preclude using an instrument, which is based on the summation of axle group loads when the total vehicle is proper and Part B is developed. However, the U.S. recommended deleting section 2.6 of the draft because it states, "if an instrument is capable of indicating individual axle loads and/or axle group loads, it shall clearly indicate that these values shall not be used for trade or enforcement." Requirements from ASTM E 1318-94 Standard were also submitted. The U.S. Federal Highway Administration uses ASTM E1318 standard, which defines four categories of Weighing In-Motion usage: Type 1 through Type 4. Type 4 is for low speeds of 0 to 10 mph, and corresponds to the OIML draft. ASTM E 1318 allows total vehicle weight as well as axle weight.

SC 2 The Secretariat is reviewing and will revise the following Recommendations:

R 50-1 Continuous Totalizing Automatic Weighing Instruments (beltweighers). Part 1: Metrological and Technical Requirements - Tests;

R 50-2 Continuous Totalizing Automatic Weighing Instruments (beltweighers). Part 2: Test Report Format;

R 51-1 Automatic Catchweighing Instruments. Part 1: Metrological And Technical Requirements - Tests;

R 51-2 Automatic Catchweighing Instruments. Part 2: Test Report Format;

R 61-1 Gravimetric Filling Machines. Part 1: Metrological and Technical Requirements - Tests;

R 61-2 Gravimetric Filling Machines. Part 2: Test Report Format;

R 106-1 Automatic Rail Weighbridges, Part 1: Metrological and Technical Requirements - Tests;

R 106-2 Automatic Rail Weighbridges, Part 2: Test Report Format;

R 107-1 Discontinuous Totalizing Automatic Weighing Instruments (totalizing hopper weighers), Part 1: Metrological and Technical Requirements - Tests; and

R 107-2 Discontinuous Totalizing Automatic Weighing Instruments (totalizing hopper weighers) Part 2: Test Report Format.

MEASURING INSTRUMENTS FOR LENGTH AND ASSOCIATED QUANTITIES (TC 7) (RESPONSIBILITY UK)

DIMENSIONAL MEASURING INSTRUMENTS

TC 7/SC 5 Dimensional Measuring Instruments (responsibility Australia)

Background: OIML TC 9/SC 5 is responsible for developing and maintaining international recommendations and documents concerning dimensional measuring instruments. On October 28-30, 1996, the last IWG meeting was convened in the U.S. at NIST to finalize the Recommendation. In February 1997, the minutes from that meeting were distributed to the U.S. NWG. Based on decisions and comments made at the IWG meeting, the Secretariat drafted the 3rd CD and distributed it to the IWG in November 1997. This draft was distributed to the U.S. NWG for review, comment, and vote. In January 1998, a NWG meeting was held at the NCWM Interim Meeting. The U.S. expressed its position on the issues and later concluded that the group should concentrate on the CD Canada's proposed additions to the 3rd CD distributed to the group. However, Australia made no comments on Canada's proposals.

Status: In November 1998, the Secretariat (Australia) sent the first Draft Recommendation (1st DR) on Multi-dimensional Measuring Instruments to BIML. This 1st DR was distributed to the CIML members along with the results of the IWG vote. This draft was distributed to the U.S./NWG for vote and comment. Based on the U.S./NWG vote and comments, the U.S. formulated a position and sent it to BIML. The U.S. voted "FOR" the DR. Canada, France, and Germany voted "NO" on the DR. The DR was returned to Australia to address the concerns of Canada, France, and Germany. This DR has been incorporated into the 34th Meeting of the International Committee of Legal Metrology, Item 11.3 Approval of Draft Recommendations along with the results of the mailed ballot, other comments received, and the Secretariat's responses to those comments.

In February 1999, the Secretariat (Australia) distributed the first Committee Draft (1st CD) of the Format of the Test Report to the IWG for vote and comment. This document was forwarded to the U.S./NWG for vote and comments, and were due back to NIST by April 23, 1999. No comments were received. The U.S. voted "NO" on the Format of the Test Report because there were many inconsistencies within the main body of the Recommendation.

MEASUREMENT OF QUANTITIES OF FLUIDS (TC 8) (Responsibility Switzerland)

Status: On February 12, 1999, an International Working Group meeting was held in Wabern, Switzerland. The following Recommendations were discussed:

- R4 Volumetric Flasks (one mark) in Glass;
- R29 Capacity Serving Measures;
- R40 Standard Graduated Pipettes for Verification Officers;
- R41 Standard Burettes for Verification Officers;
- R43 Standard Graduated Glass Flasks for Verification Officers;
- R45 Casks and Barrels; and
- R96 Measuring Container Bottles

The IWG agreed to combine the following Recommendations into one Recommendation entitled "Vessels for Public Use":

- R4 Volumetric Flasks (one mark) In Glass;

- R29 Capacity Serving Measures;
- R43 Standard Graduated Glass Flasks for Verification Officers;
- R45 Casks and Barrels; and
- R96 Measuring Container Bottles

The first working draft (1st WD) of this recommendation has been completed (by the U.S.) and forwarded to the Secretariat (Switzerland).

STATIC VOLUME MEASUREMENT (SC 1)

TC 8/SC 1 Installations for Gauging Road and Rail Tankers (responsibility vacant)

Status: No activity

STATIC MASS MEASUREMENT (SC 2)

TC 8/SC 2 R 125 Test Report for the Evaluation of Mass Measuring Systems for Liquids in Tankers (responsibility Australia)

Status: No activity

DYNAMIC VOLUME MEASUREMENT (LIQUIDS OTHER THAN WATER)(SC 3)

TC 8/SC 3 R 117 Measuring Systems for Liquids Other than Water (responsibility Germany)

Status: See Status of R 105. On July 25, 1999 at the NCWM Annual Meeting, a U.S./NWG meeting was held in Burlington, VT.

TC 8/SC 3 R 118 Test Procedures and Report Format for Pattern Evaluation of Fuel Dispensers for Motor Vehicles (responsibility Germany)

Status: A Draft Revision (DR) of Recommendation R 118 was received May 28, 1999, and distributed to the U.S./NWG. NWG comments and vote were due back July 9, 1999. Few comments were received. BIML issued a letter stating that several Participating-Members of TC 8/SC 3 disagreed over the BIML procedure taken on the revision of R 118. R 118 did not follow the conventional stages of development starting as a WD to CD and then becoming a DR. The mail vote for R 118 has been canceled; however, comments are requested to be submitted by September 15, 1999. Comments will be collated and reviewed and will be the basis for an IWG meeting.

On July 25, 1999 at the NCWM Annual Meeting, , an U.S./NWG meeting was held in Burlington, VT.

DYNAMIC MASS MEASUREMENT (LIQUIDS OTHER THAN WATER) (SC 4)

TC 8/SC 4 R 105 Direct Mass Flow Measuring Systems for Quantities of Liquid (responsibility United States)

Status: On February 4, 1999 at the NCWM Interim Meeting, a Working Draft (WD) was distributed to the U.S./NWG for discussion in Albuquerque, NM. However, Dr. Mencke, PTB, expressed his belief that R 105 should be merged into R 117. The U.S./NWG agreed to meet with Dr. Mencke in Switzerland, February 12, 1999, and review the merger proposal. The U.S./NWG also agreed that there would be no decision made until the U.S./NWG had an opportunity to review the differences between the two recommendations.

On July 25, 1999, at the NCWM Annual Meeting, an U.S./NWG meeting was scheduled to discuss the differences.

WATER METERS (SC 5)

TC 8/SC 5 R 49 Water Meters Intended for the Metering of Cold Potable Water (responsibility United Kingdom)

Status: 4 CD 4th Committee Draft Revision of R 49 Cold Water Meters.

1 CD 1st Committee Draft Revision of R 49 including supplementary requirements for water meters with electronic devices.

1 WD Working draft of the Format of the Test Report.

TC 8/SC 5 R 72 Hot Water Meters (responsibility United Kingdom)

Status: R 49 is on hold until issues are resolved; R72 will likely be merged with R 49.

CRYOGENIC LIQUIDS (SC 6)

TC 8/SC 6 R 81 Dynamic Measuring Devices and Systems for Cryogenic Liquids (responsibility United States)

Status: R 81-1 Dynamic Measuring Devices and Systems for Cryogenic Liquids (including tables of density for liquid argon, helium, hydrogen, nitrogen and oxygen), Part 1: Metrological and Technical Requirements - Tests. The document has been published and is currently available from BIML.

R 81-2 Dynamic Measuring Devices and Systems for Cryogenic Liquids Part 2: Test Report Format has been distributed to the CIML and comments were received. The Secretariat is currently editing the draft, and considering the comments received. When the Secretariat completes its work, the Recommendation will be sent to BIML for publication.

GAS METERING (SC 7)

TC 8/SC 7 Measuring Systems for Gaseous Fuel (responsibility Belgium)

Status: On February 8-11, 1999, an IWG meeting of TC 8/SC 7 was held to discuss the working draft (3rd version) distributed for comment, in Brussels, Belgium.

At their Winter Committee Meetings in San Antonio, Texas, the American Gas Association hosted a U.S./NWG meeting. A summary of the February 1999 IWG meeting was presented. The U.S./NWG was able to review some of the Secretariat's responses to their comments on the 3rd version.

No information on the February 1999 meeting or draft Recommendation has been received from the Secretariat; although a tentative IWG meeting is scheduled for April 2000 in Paris, France.

TC 8/SC 7 Compressed Natural Gas for Vehicles (responsibility Belgium)

Status: On December 18, 1998, a working draft (WD) titled "Preparatory Work of the First Committee Draft Version 1 - December 1998 Direct Mass Flow Measuring Systems For Gas" was received by e-mail from Belgium.

The WD was distributed by e-mail to the U.S./NWG for comment. The WD was also distributed to members of the U.S./NWG attending the NCWM Interim Meeting on February 4, 1999, in Albuquerque, NM.

An IWG meeting of TC 8/SC 7 took place from February 8-11, 1999, in Brussels to discuss the first working draft distributed for comment. The IWG reached a consensus that the U.S. should object to the Recommendation since it restricted the measurement to direct mass flow devices, when the Recommendation should not be technology-specific.

During the 1999 NCWM Interim meeting in San Antonio, Texas, participants in the U.S./NWG meeting reviewed some of the Secretariat's responses to their comments. The U.S./NWG's primary concern with the 1st WD was that it appears to be for "direct mass measurement" only and could possibly restrict the technology to direct mass flow devices. The U.S./NWG agreed that the output or indicating units should be in mass (since the device can only be verified gravimetrically at an installation site) but any metering device (volumetric or mass) should be allowed, as long as it meets the requirements of the recommendation.

A 2nd WD, newly titled "Compressed Gaseous Fuel Measuring Systems For Vehicles," and a summary of the February 1999 OIML IWG meeting on CNG were received. This working draft has been distributed to the U.S./NWG for comment. Comments are due back to the Secretariat by September 15, 1999. An IWG meeting is tentatively planned for April 2000 in Paris, France.

GAS METERS (SC 8)

TC 8/SC 8 R 6 General Provisions for Gas Volume Meters (responsibility the Netherlands)

Status: No activity.

TC 8/SC 8 R 32 Rotary Piston Gas Meters and Turbine Gas Meters (responsibility the Netherlands)

Status: No activity.

Asia-Pacific Legal Metrology Forum (APLMF)

The Asia-Pacific Legal Metrology Forum (APLMF) was established at a November 1994 meeting convened by the Australian National Standards Commission in Sydney. The Forum was attended by legal metrology authorities from 14 of the 18 APEC economies. For additional information on its history and status view the APLMF web site <http://www.aplmf.org/>.

APLMF INTERCOMPARISONS

1. The Nonautomatic Weighing Instruments intercomparison is complete; however, the Convenor has not distributed a report.

2. The Mass intercomparison was delayed, pending information from Asian Pacific Metrology Program (APMP). The APMP also conducted a mass intercomparison. The APLMF Convenor wants to view final results from that intercomparison before commencing an APLMF mass intercomparison.

3. The Load Cell intercomparison has two pilot laboratories, the United States National Institute of Standards and Technology (NIST) and Australia's National Standards Commission (NSC). NIST accepted responsibility for the load cells to be tested by Germany, the United Kingdom, Russia, and Japan. The NSC accepted responsibility for the Pacific Rim countries comprising China, Korea, Chinese Taipei, and Vietnam. The two pilot laboratories each tested four load cells: two 250-kg capacity load cells, and two 20 000-kg capacity load cells. NIST sent one pair of load cells to Germany (Set A) and one pair of load cells was sent to the Asian-Pacific countries (Set B).

Status: Set A has been tested by Australia (NSC), U.S. (NIST), Germany (PTB), UK (NWML), and is presently in Russia. It will be dispatched to Japan in July 1999, and then back to the U.S. Australia has received the results from the U.S. and Germany as well as the NSC results. NIST has received data from PTB and the NWML. Japan and Russia had difficulty fitting the load cells into their testing programs.

Set B was sent to Australia (NSC), the U.S. (NIST), China, Korea, Chinese Taipei, Vietnam, and back to Australia (NSC). NSC is in the middle of re-testing the two cells. Australia received results from the U.S., China, and Chinese Taipei, as well as NSC results.

The analysis of the results is not yet complete.

4. Flow Metering. The APLMF is investigating an international intercomparison of flow meters. The U.S. asked for more specific information before committing to this type of intercomparison.

APLMF WORKSHOPS

The APLMF organized workshops held in Shanghai, Peoples Republic of China from August 31 through September 10, 1998. The first workshop addressed High Capacity Weighing Apparatus and the second was on Non-Automatic Weighing Instruments. The workshops emphasized the basis of pattern (or type) evaluation and approval according to interpretations of the relevant OIML Recommendations on Weighing Instruments and Systems. Initial and subsequent verifications of such instruments and systems were also briefly discussed.

Twenty-three participants from 16 countries participated in the workshops. These included representatives from Albania, Australia, Peoples Republic of China, Chinese Taipei, Indonesia, Japan, Laos, Malaysia, Mongolia, New Guinea, New Zealand, Philippines, Singapore, Thailand, United States, and Vietnam.

Workshop on High Capacity Weighing

The workshop addressed the following Recommendations:

OIML R 50-1 Continuous Totalizing Automatic Weighing Instruments (beltweighers). Part 1: Metrological and Technical Requirements - Tests;

OIML R 50-2 Continuous Totalizing Automatic Weighing Instruments (beltweighers), Part 2: Test Report Format;

OIML R 106-1 Automatic Rail Weighbridges, Part 1: Metrological and Technical Requirements - Tests;

OIML R 106-2 Automatic Rail-Weighbridges, Part 2: Test Report Format;

OIML R 107-1 Discontinuous Totalizing Automatic Weighing Instruments (totalizing hopper weighers), Part 1: Metrological and Technical Requirements - Tests;

OIML R 107-2 Discontinuous Totalizing Automatic Weighing Instruments (totalizing hopper weighers) Part 2: Test Report Format.

A one-day field trip was arranged to Baosteel in the Baoshan District of Shanghai. The trip was to observe their operations from receipt of the iron ore from tankers to the delivery of the final product, which is sent to the end user. The group observed a hopper scale, belt conveyor scale operations, a large truck scale, and an automatic rail weighbridge.

Workshop on Nonautomatic Weighing Instruments

The second workshop led by Kerry Marston and Keith Mann, NSC, (Australia) was held the second week, from Sept 3-10, 1998. The workshop covered: (1) OIML R 76-1 Nonautomatic Weighing Instruments, Part 1: Metrological and Technical Requirements - Tests; (2) Amendment No. 1 to OIML R 76-1; (3) OIML R 76-2 Nonautomatic Weighing Instruments, Part 2: Pattern Evaluation Report; and (4) Amendment No. 1 to OIML R 76-2.

A one-day field trip was arranged to visit the Shanghai Yamato Scale Co., LTD., AUDIX Technology (Shanghai) Co., Ltd. Electromagnetic Compatibility (EMC) and safety laboratory, and Mettler-Toledo (Shanghai) Ltd.

Asia Pacific Legal Metrology Forum (APLMF)

The 5th APLMF met on October 26-27, 1998, with representatives from 16 of the 22 member economies. Peru conveyed apologies for not attending. The following international and regional organizations were also present as observers: International Organization of Legal Metrology (OIML), South African Legal Metrology Cooperation (SALMEC), and Western European Cooperation in Legal Metrology (WELMEC). Six working group meetings preceded the Forum meeting.

The 6th APLMF meeting and meetings of the Working Groups hosted by Direktorat Metrologi, Indonesia will be held from September 7-9, 1999 at Hotel Putri Bali, Nusa Dua, Bali, Indonesia. The Secretariat received confirmation on the dates of the meeting from Mr. Rasben Simanullang, the Director of Direktorat Metrologi.

International Committee of Legal Metrology (CIML)

The 33rd meeting of the International Committee of Legal Metrology (CIML) Seoul, Korea was held October 29-30, 1998. Dr. Sam Chappell, Chief of the Technical Standards Activities Program NIST, attended the meeting. Mr. Jim Truex of the State of Ohio, representing the National Conference on Weights and Measures (NCWM) accompanied Dr. Chappell. On October 25-27, 1998, Dr. Chappell and Mr. Truex participated in the 5th meeting of the Asia Pacific Legal Metrology Forum (APLMF), which was also held in Seoul.

The 34th Meeting of CIML is scheduled for October 5-8, 1999, in Tunis, Tunisia. The exact date will be determined after consideration of the meeting dates of other liaison international organizations.

**Report of the Committee on
Administration and Public Affairs**

Richard D. Greek, Co-Chairman
Agricultural Commissioner/Sealer
San Luis Obispo County, California

Richard L. Philmon, Co-Chairman
Illinois Department of Agriculture
Springfield, Illinois

Reference
Key Number

400 Introduction

The Committee on Administration and Public Affairs (Committee) submits its Report for the 84th National Conference on Weights and Measures. This document consists of the Interim Report presented in NCWM Publication 16 "Program and Committee Reports," as amended in the Addendum Sheets issued during the Annual Meeting. The Committee considered communications received prior to and during the 84th Annual Meeting which are noted in this report.

Reference Key Items Contained in the Report

Table A identifies all of the items contained in the report by Reference Key Number, Item Title, and Page Number. The item numbers are those assigned in the Interim Meeting Agenda. Voting items are indicated with a "V" after the item number. Items marked with an "I" after the reference key number are informational items. An item marked with a "W" means that item has been withdrawn.

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| Table C Voting Results | | | | | |
|---|--------------------------------|------|--------------------|------|---------|
| Reference Key Number | House of State Representatives | | House of Delegates | | Results |
| | Yeas | Nays | Yeas | Nays | |
| 403-5 (Motion to support and move item to Board of Directors Agenda) Voice Vote | All | None | All | None | Passed |
| 400 (Report in its Entirety) Voice Vote | All | None | All | None | Passed |

Details of All Items
(In Order by Reference Key Number)

401 Committee Administration

401-1 I Administration

The Committee updated its work plan, budget request, and planning calendar for the upcoming year. Following the Interim Meeting, Conference Chairman Aves Thompson, appointed Richard Philmon (Illinois) as acting Interim Committee Chairman in the absence of Richard Greek (San Luis Obispo, CA). Mr. Thompson also appointed Jerry Flanders (Georgia) and Louis Greenleaf (New Jersey) to fill vacancies that resulted from the resignations of Charles Carter (Oklahoma) and Nelson Kranker (Dutchess County, NY).

At the Annual Meeting, incoming Chairman G. Weston Diggs of Virginia appointed Steve Hadder (Florida) to a 5-year term to fill the vacancy created when Richard Greek's appointment to the Committee ended in July 1999.

402 Regional Weights and Measures Activities

402-1 I Regional Reports

Source: Regional Weights and Measures Association Meeting Reports

The Committee reviewed reports received from the Central and Northeastern Weights and Measures Association Annual Meetings and considered the comments from these associations in preparing final recommendations to the NCWM.

The Committee identified the following issues for regional discussion:

1. Contact each regional association Chairman and ask that a safety liaison be appointed for the association (see 403-2).
2. Identify training needs for the association, individual jurisdictions, and service personnel.
3. Work within the association to identify qualified trainers and to promote the NCWM Certified Trainer Program (see 404-3).
4. Assist the Committee by nominating qualified individuals from government and industry to serve on the Trainer Subcommittee (see 403-5).

403 Program Management

403-1 I Voluntary Program Assessment Working Group

Source: Board of Directors

Background: NCWM Chairman Aves Thompson appointed the Voluntary Program Assessment Working Group (VPAW), which is chaired by Sid Colbrook of the State of Illinois. VPAW continues the work of the Program Evaluation Working Group (PEWG) that completed its work in 1998.

Sid Colbrook summarized the first meeting of VPAW that was held on January 30, 1999 in Albuquerque, NM. (For a summary of VPAW's works see Appendix A). The primary task of VPAW is to develop a voluntary method of self-assessment of weights and measures programs. The original objective of establishing a national database for use in evaluating the effectiveness of weights and measures programs has been expanded to include minimum standards for weights and measures programs, model report forms, and criteria for self-assessment. Ross Andersen (New York) has formed a Retail Motor Fuel Subgroup including Steve Martin (New York), Mike Sikula (New York), Barbara DeSalvo (Ohio) and Mike Belue (Belue Assoc.) to develop an evaluation checklist for retail motor-fuel dispensers. The group is also developing a model report form for inspection and testing of retail motor-fuel dispensers and minimum standards criteria. An assessment checklist will be evaluated at the Central Association and Northeastern Association meetings prior to the 85th NCWM Annual Meeting.

Action at 84th Annual Meeting

The Committee reviewed the first draft of a checklist for assessing a retail motor fuel program prepared by the Retail Motor Fuel Subgroup. The Retail Motor Fuel Program Self-Assessment Checklist uses a question and answer format that allows users to perform a comprehensive review of their programs by comparing the different components of their programs to the model requirements in the checklist. The checklist contains minimum requirements for laws and regulations, test equipment, training, supervision, and enforcement practices and includes separate checklists for the administrative and inspection functions of a program. The checklist for retail motor fuel devices will serve as the model for future checklists for retail computing and vehicle scales, vehicle tank meters, loading rack meters and other program functions such as package inspection.

Copies of the first draft of the Retail Motor Fuel Program Self-Assessment Checklist, which are available from the Committee, were distributed at the Committee's open hearing. Send comments to Ross Andersen, State of New York, Department of Agriculture and Markets, 1 Winners Circle, Albany, New York, 12235. You can also contact him by fax at 518-457-5693 or by email at agmweigh@nysnet.net on the Internet.

The Group will prepare a second draft of the checklist by October 1999, and volunteers will test it later this year. The Committee will arrange for presentations on the checklist to be made at the regional association meetings this fall. It will also consider the results of the field tests and comments at the Interim Meetings in January 2000. The Committee will also develop a formal recognition for those jurisdictions who successfully complete the self-assessment. The Committee may also recommend NCWM adoption of the Retail Motor Fuel Program Self-Assessment Checklist at the 85th NCWM Annual Meeting.

The Committee commends Sid Colbrook and the other members of the VPAW, especially Ross Andersen, Steve Martin, and Mike Sikula (New York), Barbara DeSalvo (Ohio), and Mike Belue (Belue Associates) for volunteering their time and talents to develop the checklist.

Volunteers Needed

The Committee needs volunteers to field test the Retail Motor Fuel Program Self-Assessment Checklist and assist us in finalizing it for possible NCWM adoption. Volunteers from both State and local jurisdictions are needed to participate in the field evaluation of the checklist to ensure that it meets the diverse needs of the weights and measures community. To volunteer, please contact Sid Colbrook at 217-524-7801 or by e-mail at scolbrook@agr084rl.state.il.us on the Internet.

The Committee also needs volunteers to help develop checklists for other weights and measure activities such as vehicle scales, retail computing scales, vehicle tank meters, and others using the Retail Motor Fuel Program Self-Assessment Checklist as a model. The Committee will provide the checklist in electronic format and provide technical assistance to help those willing to participate in this important work. To volunteer, please contact Sid Colbrook. The next meeting of the VPAW will be held at the 2000 Interim Meeting in January.

403-2 I Safety Information

Source: State and Local Jurisdictions Incident/Accident Report Forms

The Committee did not receive any Incident/Accident Reports this year. The Committee is considering the possibility of creating a safety information section on the NCWM Homepage on the Internet. Among the information that may be included is a copy of the Incident/Accident Report Form and links to other safety information including Material Data Safety Sheets. A copy of the Incident/Accident Report Form is included in Appendix B.

Committee Safety Liaison, Charles Gardner (NY), discussed the need to distribute the 1991 Report of the National Conference on Weights and Measures Task Force on Safety, to Committee members for discussion at the regional association meetings. The staff of weights and measures jurisdictions has experienced tremendous turnover since the Task Force on Safety published its report. The Committee wants to get safety information out to new Conference Members. Mr. Gardner suggested that each regional association appoint a safety liaison to coordinate safety related issues within each region and to work with the Committee's Safety Liaison.

Action at Annual Meeting: The Committee's regional representatives will request that their region's Chairman appoint a Safety Liaison to work with the Committee.

403-3 I NCWM Internet Home Page

<http://www.nist.gov/ncwm>

Source: Board of Directors

The NCWM Board of Directors has decided to maintain the NCWM Internet Home Page on the NIST Office of Weights and Measures (OWM) site. OWM maintains the current NCWM Internet Site along with OWM's at no charge to NCWM. The Committee will work with OWM to update and maintain the NCWM Home Page. The NCWM homepage can remain at NIST with NCWM oversight, but Federal policies restrict what NCWM can include on the site (e.g. commercials or product endorsements cannot be posted).

The Committee will develop a plan to expand the variety, scope, and amount of information available on its Internet homepage for consideration at the Interim Meeting in 2000. The Committee is considering adding links to other noncommercial sites that provide safety information (e.g., material safety data sheets), State and Federal laws and regulations, and homepages of State and local weights and measures offices.

403-4 I Publication Status Report

Source: Carryover Item from Board of Directors

The Committee received no requests for publication status at the Annual Meeting. At the Interim Meeting, the Committee received the following information from OWM on the latest publications cost which are listed below.

| Publication | Edition | Cost | No. Sold through 12/98 |
|------------------------------|---------|----------|------------------------|
| Handbook 44 | 1998 | | 966 |
| Handbook 130 | 1998 | | 184 |
| Handbook 44 | 1999 | \$10,150 | 0 |
| Handbook 130 | 1999 | \$6,750 | 0 |
| 83 rd NCWM Report | 1998 | \$6,300 | 0 |
| Publication 15 | 1999 | \$3,790 | 0 |

403-5 V NCWM Strategic Planning - Training Work Plan Development

(This Item Was Adopted)

Source: NCWM Training Plan Work Group

The Training Plan Work Group Chairman Max Gray (Florida) reported about a meeting held in December 1998 to finalize the work plan and to prepare a Training Delivery Plan in a Three-Year Cycle. The final report of the work group is included as Appendix C of this report. The Committee reviewed the plan and presented it as a voting item at the 84th NCWM Annual Meeting in Burlington, VT where the Conference unanimously adopted it.

The training plan includes:

- Training courses to be offered during the next fiscal year of NCWM.
- A way to update and maintain training materials.
- A process to classify trainers as certified or qualified to deliver training.
- A process for ongoing quality assessment and improvement.

The Committee will revise NCWM Publication 11 National Training Program (NTP) to incorporate the provisions of the training plan and will focus on implementing the new goals and standards over the coming year. The NTP Strategic Plan Work Group was disbanded following NCWM adoption of the training plan. The Committee acknowledges the contributions of the members of the work group including Barbara DeSalvo (Ohio), Bruce Martell (Vermont), Max Gray (Florida), Richard Greek (San Luis Obispo County, California) and Jim Ross (NIST) for their outstanding contributions to this effort.

Committee Recommendation: Adopt the Training Delivery Plan as presented in Appendix C.

404 Education

404-1 I National Training Program

The Office of Weights and Measures, in cooperation with the National Training Program (NTP), scheduled three Instructor Training Courses for 1999. Travel costs to attend these training courses were paid out of NCWM Training Grant Funds.

1999 Training Schedule

| | | |
|----------------|------------|---|
| March 21 - 26 | Course 202 | Retail Computing Scales |
| May 2 - 7 | Course 302 | Retail Motor-Fuel Dispensers and Consoles |
| August 15 - 20 | Course 501 | National Type Evaluation Program Training |

At the 83rd NCWM Annual Conference, the Committee approved a training seminar for administrators to be held at the 1999 Interim Meeting. Input from the Board of Directors and the Central Association Report suggested that the Interim Meeting was too soon to allow adequate training topics to be developed. The Committee will continue to develop administrator training and requested weights and measures program administrators to suggest training topics. The Committee also discussed the report of the Central Weights and Measures Training Evaluation Work Group with Central Work Group member, Kathy Dresser (Wisconsin). The Training Delivery Plan (see 403-5) of the NCWM Training Plan Work Group addresses most of the items and concerns of the Central Training Evaluation Work Group.

Mike Belue of Belue Associates completed the update of Course 302 Retail Motor-Fuel Dispensers and Consoles. The Committee accepted the revision. It was used as the basic course material in the Retail Motor-Fuel Dispenser Instructor Training School in May.

Trainer Subcommittee

The Committee met with the Board of Directors and received approval to appoint a Trainer Subcommittee to act as an advisory group to address training issues. This Subcommittee would determine training needs, select training courses to be presented, update existing training materials, and develop new training materials and courses as needed. The Trainer Subcommittee will include at least one experienced trainer from each regional weights and measures association, one industry member from the weighing, one from the measuring, and one representing the packaged commodity sector, and a NIST Technical Advisor.

Future Training

The NTP currently has \$133,971 in funds available in the Cooperative Agreement with NIST for the Office of Weights and Measures (OWM) to present Instructor Training Schools on NTP Course 206 "Vehicle Scales," and Course 304 "Loading Rack Meters." The schools are tentatively scheduled for May and August 2000. The Committee will present specific information on these schools at the Interim Meeting in January 2000.

The Committee is soliciting input from the membership to develop a priority list of training for future Instructor Training Courses. If future funding is available, the Committee recommends the following schools for subsequent years.

For 2001, the Committee proposes that Instructor Training Schools be based on NTP Course 303 "Vehicle-Tank Meters" and Course 602 "Commodity Regulations."

For 2002, the Committee proposes that Instructor Training Schools be based on NTP Course 203 "Medium Scales" and "Course 601 "Checking the Net Contents of Packaged Goods."

The Committee would also like to know how interested the members are in NCWM developing schools that focus on the inspection and testing of taximeters, automatic weighing systems, belt-conveyor scales, railroad scales, and timing devices. Please submit comments on this issue at the regional meetings or send comments and suggestions to the Ken Butcher, the Committee's Technical Advisor at kenneth.butcher@nist.gov.

404-2 I Associate Membership Scholarship Fund

Source: Associate Membership Committee

At the 83rd NCWM, the Associate Membership Committee adopted a resolution to award 15 scholarships each in the amount of \$500 for a total of \$7500. These scholarships are available to State and local weights and measures jurisdictions to recover costs of inspector training and to regional associations for publishing newsletters. The Committee will review scholarship applications and award funds. The Committee thanks the Associate Membership Committee for its generous support of weights and measures training programs. A list of this year's AMC Scholarship recipients is included as Appendix E.

404-3 I NCWM Certified Trainers/Instructor Training

The NCWM Training Plan Work Group (see 403-5) has proposed criteria to certify trainers as part of the Training Delivery Plan that was adopted at the 84th NCWM Annual Meeting. A list of NTP Certified Trainers and courses they teach follows. These individuals may be available to assist weights and measures jurisdictions in training; contact them directly. Nobody applied for certification this year.

NCWM-NTP Training Courses

| Course Number | Course Name |
|---------------|--|
| 101 | Weights and Measures Regulation in the U.S. (self-study) |
| 102 | Intro to NIST Handbook 44 |
| 103 | Intro to Electronic Weighing and Measuring Systems |
| 202 | Retail Computing Scales |
| 203 | Medium Capacity Scales |
| 204 | Livestock and Animal Scales |
| 205 | Meat Beam and Monorail Scales |
| 206 | Vehicle and Axle-Load Scales |
| 207 | Automatic Weighing Systems |
| 302 | Retail Motor-Fuel Dispensers and Consoles |
| 303 | Vehicle-Tank Meters |
| 304 | Loading-Rack Meters |
| 305 | Liquefied Petroleum Gas Meters |
| 501 | National Type Approval Program |
| 601 | Checking the Net Contents of Packaged Goods |
| 602 | Commodity Regulations |
| 604 | Price Verification |

| NCWM-NTP Certified Trainer | Date of Certification | NTP Courses Taught |
|--|----------------------------------|--|
| Darryl L. Brown, Iowa Phone: 515-281-5716 | 11/16/97 | Course No. 601 |
| Ken Butcher, NIST- OWM Phone: 301-975-3991 | 12/15/93 | Course No.'s 202, 601, 602, 604 |
| Barbara DeSalvo, Ohio Phone: 614-728-6290 | 09/21/93 | Course No.'s 103, 202, 601, 602 |
| Kathryn M. Dresser, Wisconsin Phone: 608-224-0940 | 07/16/98 | Course No.'s 202, 601, 604 |
| Frank W. Forrest, Connecticut Phone: 860-566-4778 | 10/21/93 | Course No.'s 302, 304 |
| Paul L. Peterson, USDA-GIPSA Phone: 301-251-1170 (Retired) | 09/21/93 | Course No.'s 204, 205 |
| Richard L. Philmon, Illinois Phone: 217-782-8301 | 01/03/95 | Course No.'s 202, 206, 302 |
| Byron C. School, USDA-GIPSA Phone: 202-720-5841 | 11/07/97 | Course No. 204 |
| Thomas M. Stabler, STR, Inc. Phone: 740-666-0603 | 10/04/93 | Course No.'s 202, 302, 601 |
| Richard W. Suiter, NIST-OWM Phone: 301-975-4406 | 05/17/93 | Course No.'s 103, 202, 204, 205 207, 302, 501, 601 |
| Jose A. Torres-Ferrer Puerto Rico Phone: 787-724-5153 | 06/02/93 | Course No.'s 102, 103, 202, 302, 601 Metrology 201, 202 |
| James A. Vanderwielen, USDA-GIPSA Phone: 202-720-3140 | 01/19/96 | Course No. 204 |
| Kenneth A. Wheeler, Ohio Phone: 614-728-6290 | 09/21/93 | Course No.'s 202, 203, 204, 205, 206 302, 303, 305, 601, 602 |

404-4 I NIST Handbook 44 Revision

Source: NCWM Chairman G. Weston Diggs, Virginia

At the 83rd NCWM Annual Meeting, Chairman G. Weston Diggs requested that the Committee consider revising NIST Handbook 44 to make it easier for weights and measures inspectors to understand and use. The Committee met with the Board of Directors at the Interim Meeting to determine what role the Committee will have in the proposed revision. Mr. Diggs reported that he had contacted all three Conference standing committees proposing to revise Handbook 44. The Specifications and Tolerances Committee (S&T) is responsible for Handbook 44, but the other committees need to advise the S&T about what effect changes will have on their items of responsibility. The Committee will work with the S&T Committee and any work group assigned to revise Handbook 44. The A&P Committee items of responsibility affected

Administration and Public Affairs Committee

by Handbook 44 changes include NCWM Publication 12 Examination Procedure Outlines, Instructor Training Courses, and the NTP Training Courses.

404-5 I Special Education Session – 1999 Conference

Source: Western Weights and Measures Association

At the 83rd NCWM, the City of Seattle, Washington, presented surveys that indicated a need for information and training in specialized areas of weights and measures that may be unique to urban areas. The Committee welcomes suggestions for topics to include as special education sessions for the 85th NCWM Annual Meeting in 2000.

At the Annual Meeting, the Committee sponsored two technical presentations that had excellent attendance. The first was a report of an undercover investigation of retail motor-fuel dispenser fraud presented by Robert Atkins, Deputy Director, Los Angeles County, CA Weights and Measures. Los Angeles County, acting on a consumer complaint, found that retail motor-fuel dispensers had been altered with a computer chip designed to overcharge consumers. For more information on this presentation contact Mr. Atkins at 562-940-8922 or by e-mail at batkins@co.la.ca.us.

The second was demonstration of Handbook 133 test procedures for soil. Steve Titko of the Scotts Company and Robert LaGasse, Executive Director, National Bark and Soil Producers Association (NBSPA), gave the presentation. Mr. Titko and Mr. LaGasse demonstrated the test procedure for package soils with volumes less than 28.3 L (1 cubic ft., [25.7 dry quarts]) using a test measure built to the specifications required in Handbook 133 (20.3 cm by 20.3 cm [8 inches by 8 inches]). NBSPA announced that it would donate one test measure to each State to promote uniformity in testing and facilitate inspections of soils and similar products. For more information on the presentation or the test measure, contact Mr. LaGasse at 703-257-0111 or by e-mail at info@NBSPA.org.

The Committee expresses its appreciation to Robert Atkins, Chief Deputy Director, Los Angeles County Weights and Measures, Steve Titko, the Scotts Company, and Robert LaGasse, Executive Director, National Bark and Soil Producers Association for their informative presentations.

404-6 I Examination Procedure Outlines

Source: Mike Belue, Belue and Associates

Mr. Belue requested that the Committee establish a standardized format for the Examination Procedure Outlines (EPO's) in NCWM Publication 12. The Committee agreed that the NCWM needs to develop a uniform format for all EPO's because new ones are being developed and the current format could be simplified to make them easier to use. At the Interim Meeting, the Committee discussed the following revisions or developmental processes at the Interim Meeting:

1. Update of all EPO's in NCWM Publication 12.
2. EPO No. 1 revision by Andrea Buie, Maryland.
3. EPO No. 21 and 22 by Mr. Belue.
4. Draft EPO for Grain Moisture Meters by NTETC GMM/NIR Sector Working Group.
5. Draft EPO for Belt Conveyor Scales by NTE Technical Committee Belt Conveyor Scale Sector.
6. Ross Andersen (NY) presented an EPO for Farm Milk Tanks that the New York Weights and Measures Association developed.

The Committee reviewed the current EPO's and those being developed and found three different formats. The Committee felt that more information was needed to determine which format the weights and measures jurisdictions prefer. The possible revision of Handbook 44 (see item 404-4) will also impact EPO's. Diane Lee (NIST-OWM) presented a flow chart for the EPO process that work groups could use to develop new EPO's. OWM reported that it intends to reinstate the publication as NIST Handbook 112 which will be updated and published each year following the Handbook 44 publication schedule.

Committee Action: The Committee will not decide any format changes to the EPO's at this time. The format as found in

NCWM Publication 12 will be used until additional information justifies a change.

404-7 I Service Personnel Training

Source: Gordon Johnson, Gilbarco, Inc.
Debbie Joines, Gasoline Pump Manufacturers Association

Gordon Johnson and Debbie Joines made presentations at the Western and Southern Association Meetings asking NCWM to sponsor service personnel training that is similar to training provided to regulatory officials. The training should be mandatory for service personnel who are registered and allowed to perform official tests.

Training of service personnel was presented to the Voluntary Program Assessment Group (VPAW) (see 403-1) and is part of the Training Work Plan (see 403-5). Conference Chairman Aves Thompson asked the Committee to work with a Service Personnel Outreach Work Group he will appoint to improve the relationship between government regulators and industry service persons. The Committee will assist this work group to develop ways to deliver uniform training to service personnel.

The Committee reviewed a draft outline of a course developed for service personnel on weights and measures legal requirements and inspection procedures for retail motor fuel dispensers. The Gasoline Pump Manufacturer's Association (GPMA) developed the course entitled "Service Technicians and Weights and Measures Requirements". Debbie Joines, GPMA Chairman, presented the course. The course outline includes guidelines for organizing a class, background on legal and technical requirements, and test procedures. It is formatted so the instructor can tailor the presentations to reflect local weights and measures requirements regarding equipment repair and recalibration and notification. GPMA estimates that the complete course can be presented in one day with about six hours of classroom work.

The Committee commented on the outline, suggested some editorial and technical amendments, and recommended that GPMA test it by presenting a class for several service technicians prior to the Interim Meeting in January 2000. To obtain a copy of the second draft please contact Debbie Joines, Wayne Division, 124 West College Ave, Salisbury, Maryland 21804. Telephone 410-546-6600 and e-mail at daj@wayne.com.

405 Public Affairs

405-1 I Weights and Measures Week 1999

The 1999 Weights and Measures Week theme was "Fuel For Thought" to take advantage of the 4-panel informational brochure "*Fuel for Thought, Getting What You Pay For at the Gas Station*" distributed at the 83rd NCWM Annual Meeting and currently available from NCWM Headquarters. Contact NCWM Headquarters at phone 240-632-9454. All State Directors received Weights and Measures Week informational packets in December 1998. This information is also available on the Weights and Measures 24-Hour Fax-Line at 1-800-925-2453.

Weights and Measures Week 2000

For Weights and Measures Week 2000, the Committee selected a price-verification-related theme of "*Between the Lines- A Consumer's Guide to Accurate Scanned Pricing*" that will be based on a consumer-focused scanner accuracy brochure from the State of Pennsylvania (see Item 405-3 below). The Committee decided to ask permission from the State of Pennsylvania to use its "*Between the Lines*" brochure and theme for Weights and Measures Week 2000 (March 1-7). Please send ideas for future themes or for ideas about how jurisdictions can gain more recognition for their programs to Ken Butcher, Phone 301-975-3991, FAX 301-926-0647, or by e-mail to kbutcher@nist.gov.

405-2 I National Consumers Week 1999

Source: Kathleen Thuner, San Diego County, California

National Consumers Week has been changed to National Consumer Protection Week. It is now sponsored by the National Association of Consumer Agency Administrators in conjunction with the Federal Trade Commission, the American Association of Retired Persons, the National Consumer League, the Consumer Federation of America, the U.S. Postal Inspection Service, and the National Association of Attorneys General. National Consumer Protection Week was held the first week of February (February 1-7, 1999).

The Committee believes that Weights and Measures and the NCWM need to promote the role they play in consumer protection in conjunction with National Consumer Protection Week activities and through closer cooperation with NACAA. Kathleen Thuner, San Diego County, California, and David Frieders, San Francisco City and County have volunteered to serve as co-liaison representatives to NACAA from NCWM.

405-3 I Promoting Weights and Measures in the United States

The Committee is collecting ideas on themes to be used for informational brochures to promote weights and measures. One idea is an informational brochure about price accuracy. The Committee reviewed several brochures including one from Measurement Services Canada entitled "*Be a Smart Shopper: Make Sure You Pay the Right Price*," a second from the Federal Trade Commission called "*Making Sure the Scanner Price is Right*" and "*Between the Lines-A Consumer's Guide to Accurate Scanned Pricing*" from the State of Pennsylvania. The Committee decided to seek permission from the State of Pennsylvania to use its "*Between the Lines*" brochure and theme as the basis for a NCWM publication that could be developed in time to distribute prior to National Weights and Measures Week in 2000. The Committee will report on this effort at the Interim Meeting in 2000. The Committee will continue to collect samples of public informational items that weights and measures jurisdictions have developed.

Informational Materials Displayed at Annual Meeting

Several jurisdictions including the States of Vermont, Colorado, Pennsylvania, Michigan, Wisconsin, the County of San Diego, the City of Boston, and several regional associations shared their public information and meeting announcements with the attendees at the 84th NCWM Annual Meeting. The Committee judged the informational items for creativity, appearance, and value for public information. The participants received prizes that included Vermont Maple Syrup and San Luis Obispo, California Wine.

Commemorative Coins and Postal Display

March 2, 1999 was the 200th anniversary of the signing of the first federal weights and measures law. William M. Wilcox, Madison County New York Weights and Measures, coordinated the creation of souvenir commemorative items that were available at the 84th NCWM Annual Meeting in Burlington, Vermont. The choices included a silver or bronze medallion.

On July 13, 1999, the U.S. Postal Office set up at booth at the NCWM Meeting Hotel with a 200th anniversary postal cancellation for the National Conference on Weights and Measures Station, July 13, 1999, Burlington, Vermont 05401. They cancelled anything with first class postage and sold stamps that featured Jimmy Cagney, who portrayed a weights and measures inspector in the movie "The Great Guy."

The Committee commended William M. Wilcox, Director, Madison County, New York for his outstanding work in organizing a souvenir display marking the 200th anniversary of the first weights and measures law. For more information on the souvenirs, contact Mr. Wilcox at P.O. Box 248, Wampsville, New York, 13163 or by telephone at 315-363-5739.

405-4 I Advertisement of the 84th NCWM – 1999 Burlington, Vermont

The Committee commended the 1999 NCWM Conference host, Bruce Martell, for his outstanding contributions to the NCWM in coordinating media participation in the Annual Meeting. This resulted in positive coverage about the meeting in the local press and on television during the week of the meeting.

405-5 I Participation in the NIST 100th Anniversary Celebration

Source: Carryover item from past NCWM Executive Committee Assignment

In 2001, the National Institute of Standards and Technology (NIST) will celebrate its Centennial. The theme is "NIST – First Century of Service to the Nation." The 86th Annual Meeting of the NCWM will be held in Washington, D.C. to allow meeting participants to attend the Centennial celebration functions. Please submit ideas for ways in which NCWM can contribute to the successful celebration to Ken Butcher, phone 301-975-3991, FAX 301-926-0647, or by e-mail at kbutcher@nist.gov.

405-6 I Emerging Issues

Source: Western Weights and Measures Association

The Committee continued discussing emerging issues brought up at the 83rd NCWM meeting in Portland, Oregon. The Report of the 41st Annual Western Weights and Measures Association September 20-24, 1998 encourages using this forum as part of the Committee's agenda for an opportunity to look at new issues.

The Committee will discuss issues that are emerging in nature presented by the regional associations to determine if an informational or educational session for the Conference is needed. One issue to be presented at the 85th NCWM Annual Meeting is an undercover investigation by Los Angeles County, California, that uncovered retail motor-fuel dispenser fraud (see 404-5).

R. Greek, San Luis Obispo County, California, Co-Chairman

R. Philmon, Illinois, Co-Chairman

J. Flanders, Georgia

D. Frieders, San Francisco County, California

L. Greenleaf, New Jersey

Associate Membership Committee Representative: Robert Fuehne, Ralston Purina

C. Gardner, Suffolk County, New York, Safety Liaison

K. Butcher, NIST Technical Advisor

Committee on Administration and Public Affairs

Appendix A

NCWM Voluntary Program Assessment Working Group (VPAW)

Introduction

National Conference on Weights and Measures (NCWM) Chairman Aves Thompson approved The Voluntary Program Assessment Working Group (VPAW) at the conclusion of the 83rd NCWM Annual Meeting. Work Group members are Sid Colbrook (IL) Chairman; Craig Leisy (Seattle, WA); Charles Carter (OK); Bill Corey (American Frozen Foods); and Jim Ross, NIST Technical Advisor.

Purpose

To promote uniformity and establish minimum program standards for weights and measures inspections.

Background

VPAW is a continuation of the work started by the Privatization Work Group (PWG) and the Program Evaluation Work Group (PEWG) that concluded its work in 1998. The PWG reported that “*Uniformity and quality are needed across the country in order to ensure the long- term health of weights and measures.*” PEWG’s mission was to develop a standard of “core” data which could be used to determine the effectiveness of weights and measures programs. Data could also be used to share information between jurisdictions. Two areas were identified as a starting point for this project: Retail Motor-Fuel Dispensers and NIST Handbook 133 Package Inspection Procedures. This pilot project would become a predecessor to a national weights and measures database. Software was developed, but because additional resources were not available, the Work Group recommended that the project be discontinued.

PEWG was reorganized as Voluntary Program Assessment (VPA) and met in June of 1998 in Oklahoma City, OK. The goal of VPA was to develop a plan to recognize jurisdictions that follow a minimum set of nationally recognized standards for field inspections. VPA recommended that a voluntary program assessment work group be established to evaluate and improve weights and measures field inspections.

VPAW Meeting Summary

The Voluntary Program Assessment Working Group held its first meeting on January 30, 1999, prior to the NCWM Interim Meeting. Chairman Sid Colbrook presented the agenda for the meeting and reviewed the key elements for the Work Group to discuss.

Program Objectives:

1. Develop uniform inspection and testing procedures for each area of assessment.
2. Develop uniform training for administrators and inspectors.
3. Provide uniform training to service personnel.
4. Determine minimum test equipment and standards for each area of assessment.
5. Develop uniform report forms for each area of assessment.
6. Develop a uniform self-assessment checklist for administrative responsibilities and inspector responsibilities.

The Work Group decided that to be successful, this program must begin as a voluntary program of self-assessment. No outside accrediting body or on-site assessment by a third party would be required during the start-up phase of this program.

VPAW Meeting Summary (cont.)

There will be no required assessment areas, and a jurisdiction can apply to conduct a self-assessment in any program area.

A successful assessment will result in either recognition or accreditation as determined by a small working group that will annually review required documentation. Each year the NCWM will recognize participating programs.

Work to be done:

1. The Group must define uniform training for inspectors and administrators to meet assessment requirements. Experience in inspection and testing procedures and a field evaluation of performance may be substituted for training in some assessment areas.
2. Industry members expressed the need to identify training requirements for service personnel especially when States require service persons to be registered. VPAW will work with the Administration and Public Affairs Committee and the Service Person Outreach Working Group to determine training needs and to identify resources for training delivery.
3. The Group will determine minimum test equipment and standards and include them on the administrative and inspector checklist. The Group will develop a uniform report form to provide a means for jurisdictions to share inspection and test data.
4. VPAW will select retail-motor fuel programs as the first area for self-assessment. Ross Andersen (NY) formed a small work group consisting of Steve Martin (NY), Mike Sikula (NY), Barbara DeSalvo (Ohio), and Mike Belue (Belue Assoc.) to begin work on a template evaluation checklist for evaluation of the retail motor-fuel inspection function. Ross Andersen presented a draft administrative checklist and a draft inspector checklist that his work group had developed. VPAW determined that the retail motor-fuel work group should continue to develop the self-assessment checklists into a usable format along with a uniform report form. These should be distributed at the Central Weights and Measures Association Annual Meeting in Springfield, MO in April 1999 and at the Northeast Regional Weights and Measures Association Annual Meeting in Atlantic City, NJ in May 1999. A draft version of the retail motor-fuel dispenser program self-assessment checklist and a uniform report form was available at the 84th NCWM Annual Meeting in July 1999. If the retail motor-fuel dispenser self-assessment checklist is successful, it will be used as a template for all other program areas of assessment. The next area of development would be retail scale inspection and testing programs.

Sid Colbrook, Craig Leisy, Bill Corey, Bob Reinfried, Debbie Joines, and Jim Ross attended the first meeting.

Next Meeting of VPAW

VPAW met on July 24, 1999, in Burlington, VT prior to the 84th NCWM Annual Meeting.

Appendix B

NCWM Incident/Accident Report

(To be completed & submitted unsigned, anonymously)

The purpose of this form is accident prevention. Please incorporate this report into your safety program documentation procedures. Completing this brief report will allow NCWM to alert other organizations and jurisdictions of hazards and possible corrective actions.

1. What weights & measures function was the employee performing, where, and when?

2. Briefly describe the incident.

3. Contributing factors (check all that are appropriate):

- | | | |
|---|---|--|
| <input type="checkbox"/> inexperience | <input type="checkbox"/> weather conditions | <input type="checkbox"/> improper equipment |
| <input type="checkbox"/> lack of training | <input type="checkbox"/> equipment failure | <input type="checkbox"/> lack of protective gear |
| <input type="checkbox"/> employee error | <input type="checkbox"/> failure to follow procedures | <input type="checkbox"/> hazardous materials |
| <input type="checkbox"/> insufficient personnel | <input type="checkbox"/> job fatigue | <input type="checkbox"/> unsafe work surface |
| <input type="checkbox"/> haste | <input type="checkbox"/> environmental conditions | <input type="checkbox"/> housekeeping |
| | | <input type="checkbox"/> other |

Comments

4. Recommendations for corrective action:

Continue your comments on the (Page 2) or back of this sheet

Please send to Ken Butcher, NIST, 100 Bureau Drive Stop 2350, Gaithersburg, MD 20899-2350 (telephone: 301-975-3991) (FAX 301-926-0647)

Continuation of Comments on Numbered Items

1.

2.

3.

4.

Miscellaneous remarks:

Appendix C

NCWM, INC.

Strategic Training Plan

Training Delivery in a Three-Year Cycle

July 1999

I. FOREWORD

The National Training Program Strategic Plan Work Group prepared the following report in response to its assignment by the NCWM Inc.'s (NCWM) Board of Directors "to develop a training delivery plan in a three-year cycle." A training delivery plan is one of the objectives in NCWM's goal: "Provide uniform training programs for industry and government individuals involved in legal metrology." The group prepared this report in December 1998 and incorporated feedback received at the 1999 NCWM Interim Meeting.

National Training Program Strategic Plan Work Group

Max Gray, Florida, Work Group Chairman
Richard Greek, San Luis Obispo, California
Barbara DeSalvo, Ohio
Jim Ross, OWM

II. EXECUTIVE SUMMARY

The assignment of the National Training Program Strategic Plan Work Group (Work Group) was to develop an NCWM training plan in a three-year cycle. The plan addresses the training needs of NCWM members and other stakeholders in national legal metrology. Work Group members included Barbara DeSalvo, Max Gray, Richard Greek, and Jim Ross. Bruce Martell of the State of Vermont also contributed to the report.

With 749 weights and measures regulatory jurisdictions, an estimated 3,000 W&M regulatory officials in the United States, and over 20,000 private sector individuals involved in commercial measurement, the NCWM recognizes that it cannot meet every training need of those involved in legal metrology. Within a comprehensive plan, the Work Group set standards that provide for training to meet the majority of needs of legal metrology stakeholders. The plan provides for balanced roles and responsibilities with clear accountability for NCWM and NIST's Office of Weights and Measures (OWM). Further, the plan endorses continuous improvement through ongoing planning and assessing through soliciting member feedback, and encouraging instructor participation. NCWM will assure accountability by requiring that NCWM process and formally approve the implementation, review, and funding of the plan. The greatest challenge will be to establish dependable funding to provide the necessary resources to maintain and deliver training materials. This plan builds upon the valued resources of NCWM's existing courses, OWM Instructor Training, and the current National Training Program framework.

To assist the Work Group in developing a work plan, at the January 1998 Interim Meeting, Sonia Roussy, facilitated a joint session of the NCWM's Board of Directors and A&P Committees with a presentation. That process identified issues that needed to be addressed to provide a uniform training delivery program. That session's final product provided the framework for organizing an action plan to develop this Three-Year-Training Plan.

Following Ms. Roussy's presentation, Regional Associations reviewed and provided the Work Group feedback on the identified issues and the July 1998 Work Plan (NIST Special Publication 932, Report of the 83rd National Conference on Weights and Measures; Administrative and Public Affairs Committee, Appendix D, page A&P-22-27).

This report combines the outcome of the NCWM Regional feedback, the July 1998 Work Plan, and A&P Committee efforts that the Work Group assembled from December 1998 through February 1999. The following groups provided

input: NCWM A&P Committee, NCWM Board of Directors, and the OWM.

Administration will be based on a set of principles, and support a Three-Year Training Plan to meet the needs of industry and officials in legal metrology. The A&P Committee will administer the plan. The A&P report will include voting items for critical components of the Training Program. Key components of the NTP, which are in bold type, include administration as well as the following:

Curriculum development and management includes establishing prerequisites and levels of courses i.e., “basic” through “advanced.” The flexible format of the training materials will be designed to be appropriate for adult education. The plan calls for a trainer subcommittee of active instructors to maintain, deliver, and develop materials in collaboration with the A&P Committee and OWM. Existing NCWM courses (modules) will be reference documents for the courses.

Instructors to earn and maintain certification must meet qualifying criteria and undergo a five-year review. A registry will track certification for each course for which an instructor completes the requirements. Certified Instructors will be expected to be available to deliver OWM Instructor Training at NIST (possibly under contract) or elsewhere. A primary goal would be for NCWM Certified Instructors to work with trainers in their jurisdictions and regions to ensure delivering consistent NCWM training materials. Standards for Qualified Trainers (see A&P-21) and the courses they deliver are also established to provide for consistency and awarding of NCWM’s Education Units.

Course delivery builds on the improvement and success of the Instructor Training Program at OWM. Each course component would be evaluated to select the best teaching method for adults. The Trainer Subcommittee will identify and assess existing course goals and standards on which to build for future classes. The courses and materials that go beyond the intensive Instructor Training at OWM should be flexible and structured to meet the wide range of training needs within states, local jurisdictions, and the private sector. Short courses can contain extracts from longer courses.

Students will be certified based on standards and tracked for Course Certification Education Units (EUs). The system recognizes the range of course types that are necessary to develop and maintain competency.

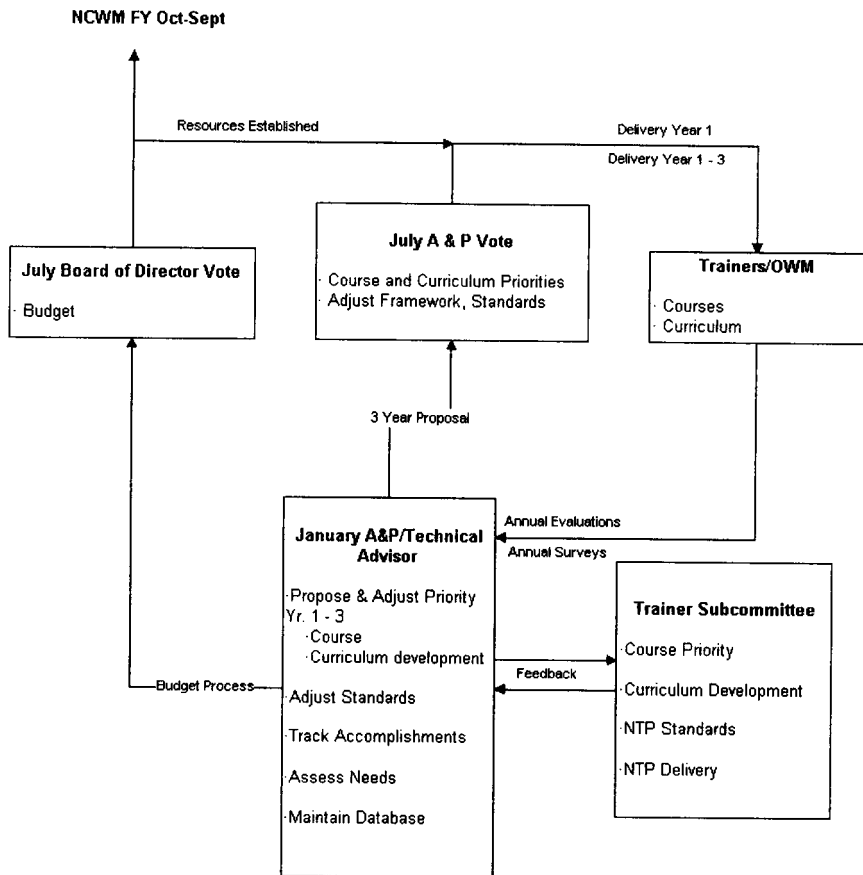
Resources will be necessary to develop an adequate program. We encourage that the standards and processes of the NTP be used regardless of the level of resources. This report provides the framework for implementing a comprehensive NTP on a three-year cycle.

Recommendations appear in the last section of this report. They provide for implementation and follow-through based on the Work Group’s efforts and the July 1999 report recommendations and the following:

1. With the Trainer Subcommittee reporting to the A&P Committee, move forward, as proposed at the Interim Meeting.
2. Rely on the A&P Committee to implement and develop any policy and administrative details. NCWM Publication 11 will require revision.
3. Establish a select group of individuals to complete a resource assessment to establish a budget. Members should include Legislative Liaison, Budget, OWM, AMC, and A&P.
4. Request that the Voluntary Program Assessment Work Group, the Service Person Outreach Work Group, and the Legislative Liaison group coordinate NTP development with the A&P Committee.
5. Disband the NTP Strategic Plan Work Group. The Committee acknowledges the contributions of Barbara DeSalvo (Ohio), Max Gray (Florida), Richard Greek (San Luis Obispo County, California), Bruce Martell (Vermont), and Jim Ross (OWM) for their outstanding contributions to this effort.

The National Training Program - At a Glance

Administration of the Three Year Planning Process



III. The National Training Program at a Glance - Structure and Standards Summary

A. Curriculum Management*

1. Build upon existing materials and courses (modules).
2. Format curriculum to allow tailoring of training to meet varying needs of officials and industry.
3. Use contemporary training delivery techniques.
4. Construct curriculum to provide prerequisites for courses; introductory, intermediate, and advanced core courses; and support continuing education and specialized course needs.
5. Use the Trainer Subcommittee to maintain, develop, and deliver courses.
6. Use the Trainer Subcommittee to develop, train, and interact with Regional NCWM Certified Instructors and Qualified Trainers.

*Curriculum construction needs to be coordinated with the Voluntary Program Assessment Working Group (VPAW) so the standard training program components of the NTP can be identified for the type of inspection program being evaluated. Also, the Service Person Outreach Work Group's efforts may influence curriculum construction.

B. Instructor/Trainer Standards

1. Certified Instructors

- a. Complete Instructor Training Course.
- b. Complete 16 hours of a recognized or approved (by A&P Committee or Trainer Subcommittee) course on adult training delivery or possess teaching degree/credential.
- c. Plan and present course with above satisfactory rating.
- d. Certified for additional courses once an instructor training course is completed for that subject.
- e. Five-year review of Trainer Certification to be maintained in the NCWM registry.

2. Qualified Trainers

- a. Attend a full course in the subject matter delivered by a Certified Instructor or OWM.
- b. Demonstrate subject matter competency.
- c. Nomination by a Certified Instructor, A&P Committee, OWM or the Trainer Subcommittee.
- d. Five-year review of Qualified Trainers to be maintained in NCWM registry.

3. Course Delivery

- a. Instructor Training at NIST.
- b. Official/Industry Training at any location.
- c. Provide course update and evaluations after each course.

4. Student Certification

- a. Maintain registry and award certificates and EUs.
- b. Meet competency standards established for course and related field verification through examinations.

Administration and Public Affairs Committee

- c. Complete course evaluation

5. Student Certification for Short and Special Courses

- a. Student completes course requirements.
- b. Student completes course evaluation.
- c. NTP issues Educational Units and Certificates of Completion.

IV. The NCWM National Training Program

A. Vision and Principles

Throughout the process, the Work Group focused on the Vision provided by the NCWM's Board of Directors. The group established and refined its principles from Sonia Roussy's presentation at the 1998 Interim Meeting.

1. Vision

Three-year training plan meeting the needs of industry and officials in legal metrology.

2. Principles

OPEN to officials and industry.

BALANCED program with a focus on identified "right subjects" by listening to member's needs to establish course priorities.

PLANNED and pre-scheduled courses on three- year cycle with firm commitments and goals for the next 12 months.

CLEAR ROLES and responsibilities with accountability.

ADEQUATE resources to maintain and develop materials and deliver training.

MOST CURRENT course materials immediately available to participants after completion.

ESTABLISH MINIMUM training standards for W&M functions.

CONTINUOUS IMPROVEMENT through ongoing review.

B. Administration

The Administration and Public Affairs Committee will administer a three-year training plan to meet the needs of industry and officials who work in legal metrology. The Committee recognizes the collaborative relationship with OWM. The Committee continuously evaluates resources, priorities, and sets voting items for components of the NCWM training program. This section establishes the Work Group's recommendation for roles and responsibilities of the Administration and Public Affairs Committee, OWM, and NCWM's Board of Directors.

The Administration and Public Affairs Committee (A&P) will manage the strategic plan for the National Training Program. The framework of this plan consists of established standards for each component, which include curriculum management and development, instructor standards, course delivery, and student certification. Based on these standards and available resources, the A&P establishes priorities for delivering courses on a three-year cycle. The A&P will annually evaluate the curriculum. The A&P will recommend voting items establishing course priorities for the upcoming year and a preliminary course focus for year two and three. This will insure that the training program revolves on a three-year cycle with continuous improvements to the framework and standards of the National Training Program (NTP).

Based on the established structures and standards, a continuous improvement process will be in place using customer surveys and course evaluations. The A&P will conduct customer surveys of NCWM members; OWM staff, and NCWM trainers; Regional A&P Committees; AMC members, and the Trainer Subcommittee. Along with customer surveys, the

A&P Committee will review instructor and student course evaluation summaries which are required for all NCWM sanctioned courses. The customer surveys and course evaluations will assist the A&P Committee to recommend courses for NCWM and continuously reassess the NTP program.

The Trainer Subcommittee that reports to the A&P is a crucial component in the process of evaluating and priority settings. The Subcommittee will provide critical perspective and knowledge about setting standards for the NTP and evaluating feedback and new ideas. Along with OWM staff, the Training Subcommittee has unique insight regarding the delivery system and related technical expertise.

Once the A&P sets priorities, it will establish the budget for updating materials and delivering courses. The question is, do we establish the priorities based upon the funding or establish priorities and then seek the funding? The reality will be both. We need to be prepared with clear goals and priorities to ensure that when unexpected money arrives, we use it judiciously.

The customer survey and course evaluation process provide information to establish a proposed budget which can then be incorporated into the NCWM Budget. The A&P will establish a proposed work plan and goals for the National Training Program and obtain funding approval through NCWM's budget process. The NCWM membership approves NTP goals and work plan through the A&P report which is adopted at NCWM's Annual Conferences.

A key component of the work plan is the three-year-training schedule which will be made available electronically in a comprehensive format that acknowledges state, local, industry, NCWM, and OWM training based on the NTP curriculum, materials, and standards. This information will be located on NCWM Internet homepage. OWM Instructor Training Courses will be posted on the NCWM Web Site or in the "Weights and Measures Today" Newsletter one year in advance of the classes to provide adequate planning for course development and jurisdictional participation. The training plan, presented as a voting item in the A&P report, will establish a preliminary focus for year two and three based on the available projected or the expected resources.

OWM will electronically maintain materials and resources including an on-line catalogue. Components of a new training catalog include a list of the NCWM Certified Instructors and Qualified Trainers, their areas of expertise, the curriculum and related materials, and a list of courses that are available on the three-year cycle. Other potential components of the site (<http://www.nist.gov.ncwm>) include NCWM and OWM resources for weights and measures programs, possible links to other sites, such as other government associations and private sector areas that provide resources and training. OWM has agreed to update the information on the Internet in connection with publishing the "Weights and Measures Today" newsletter.

The roles and responsibilities for the components of the NCWM strategic plan for training follow: the A&P Committee will manage the National Training Program's Strategic Plan. Evaluation of the NTP, its maintenance, and assurance of continuous improvement through policy development and administrative decisions will be ongoing. The A&P will recommend actual curriculum and courses to be delivered over a three-year period as voting items at the NCWM's July Conference in the A&P Committee report.

OWM is the lead for Instructor Training and provides training at its campus facilities at NIST Gaithersburg, MD. Grant resources developed by OWM will be established based on a Memorandum of Understanding between OWM and NCWM. These will be available to further the goals of NCWM's National Training Program in the areas of instructor training; student training; database management; and training materials, maintenance, and development. OWM will provide the technical advisor for the Administration and Public Affairs Committee and assists with coordinating the National Training Program. All training-related databases will be maintained and updated by OWM following the Weights and Measures Today newsletter publishing schedules. A critical component of the A&P technical advisor's responsibilities will be coordinating and using the knowledge and abilities of the Trainer Subcommittee. This resource assists the A&P Committee to evaluate the structure and standards of the training program, as well as develop curriculum and deliver courses. Beyond its advisory role, the Trainer Subcommittee represents a critical resource for course delivery and moving the National Training Program out to the Regional Associations and their respective local jurisdictions.

The Board of Directors of NCWM supported the presentation of the National Training Program's Strategic Plan as a voting item before the Conference on the A&P Committee Agenda. The Board of Directors' leadership, direction, and decisions relative to the National Training Program budget, as well as coordinating any grants and legislative initiatives, will be critical to the ultimate level of service the National Training Program will provide.

C. Curriculum Management and Development

1. Instructor Training Courses

The OWM Instructor Training Courses will remain as the basis for training delivery to state and local weights and measures jurisdictions. Currently, six updated instructor training classes are available. Updating the remaining NTP Training Modules to Instructor Training Courses and developing new courses will be an OWM function with input from the A&P Committee, Trainer Subcommittee, Certified Instructors, and Qualified Trainers.

2. Trainer Subcommittee

The following members will be appointed: At least one experienced trainer from each regional association, industry members from the weighing, measuring, and packaging sectors, and an OWM Technical Advisor. This subcommittee will advise the A&P Committee about training needs, coordinate regional training, and assist OWM to upgrade courses and develop new courses.

3. Certified Instructors

The A&P Committee will maintain a list of Certified Instructors and Qualified trainers. State and local jurisdictions can use this list for training advice and course delivery. Certified Instructors will deliver Instructor Training Classes when a OWM trainer is not available or assist OWM at Instructor Training Classes. Participants will earn Educational Units (EU's) when classes are offered by Certified Instructors.

4. Qualified Trainers

Students who successfully complete an Instructor Training Course and present that course at the State or local level will be listed as "Qualified" to teach that specific course. Qualified Trainers will review training materials prior to training delivery and provide information to OWM on any updates or changes that are needed to keep materials current. The A&P Committee will keep a list of Qualified Trainers for use by State and local jurisdictions in locating instructors. The A&P Committee or Trainer Subcommittee will approve issuing EU's for classes taught by Qualified Trainers.

5. Educational Units

Educational Units (EU's) will replace the Continuing Educational Units (CEU's) offered for successfully completing the NTP Training Modules. The company that maintained the CEU database and provided transcripts to students no longer provides this service. NCWM will issue one (1) EU for each ten (10) hours of recognized course training completed.

6. Regional/State/Local Training

Certified or Qualified Trainers will deliver training at the Regional, State, and local levels. OWM trainers may participate if a national study is involved or if the jurisdiction has demonstrated that training is not available within the region.

7. Service Person Training

Training of Industry Service Persons will be developed thru the National A&P Committee with delivery being the responsibility of the private sector, regional association or jurisdiction. Training needs and delivery will be a function of the Service Person Outreach Work Group that NCWM Chairman Aves Thompson is forming. The Trainer Subcommittee, Certified Instructors, Qualified Trainers, and the Service Person Outreach Group should all be able to modify existing training courses to meet the needs of the service person.

D. Instructor Standards

A successful National Training Program (NTP) delivery system requires that Qualified Trainers and Certified Instructors who teach courses are committed to assure that training delivery meets the standards set by the NCWM. The delivery of NCWM-sanctioned training has a two-tiered approach. The foundation is the Instructor Training Program conducted and/or coordinated by OWM. In order to be sanctioned, tracked, and awarded credits by the NCWM training must be delivered by a individual who is registered with the NCWM as a Certified Instructor or a Qualified Trainer.

1. Certified Instructor

A Certified Instructor must meet the following key standards.

- a. Completion of a "Train the Trainer" course or program on adult training delivery of at least 16 hours in length approved by the A&P Committee or the Trainer Subcommittee, or possess a teaching certificate or degree from an accredited educational institution;
- b. Satisfactory completion of an OWM-sponsored Instructor Training Course in a particular subject area;
- c. Plan and present the subject course in a classroom setting with sufficient notice given to the A&P Committee to allow for an evaluation process to be established;
- d. Submit to the NCWM A&P Committee the NTP training evaluation forms which participants complete (Student Evaluation Forms);
- e. An overall evaluation by the student participants of "Above Satisfactory" as well as the same evaluation by the A&P Committee using the established evaluation process.

Once an individual is a Certified Instructor in any NTP course or subject, certification in additional courses requires either participation in an OWM Instructor Training Course for those specific subjects with the required prerequisites or through documented competency in the specific subject area and approval of the A&P Committee. Each Certified Instructor must continue to adhere to the standards set for Certified Instructors and NCWM sanctioned training delivery.

A Certified Instructor will be evaluated every 5 years to insure that each instructor maintains the necessary training skills necessary to effectively deliver and train in each subject area. A Certified Instructor who has not conducted training during the past 5-year period or does not meet the standards established by the A&P Committee will lose certification. (Once NCWM adopts this plan, all NTP currently-registered Certified Instructors will be subject to this review in 5 years to determine the status of their certification.)

In addition to meeting the above requirements, Certified Instructors must agree to be available to deliver OWM sponsored instructor training. This training may take place at NIST facilities or other locations. Training may be provided on a contractual basis with the NCWM or OWM.

Certified Instructors are also expected to continue to submit to the NCWM A&P Committee all student evaluation forms for any courses delivered under the NTP.

Certified Instructors are expected to customize student training such as short courses, or supervise Qualified Trainers in developing training that meets jurisdictional or other target group needs. Certified Instructors must assure that the information and training delivered is uniform.

OWM will maintain a registry of NCWM Certified Instructors and the course(s) in which they are certified as part of the catalogue of training resources. OWM will keep a electronic current catalog of resources.

2. Qualified Trainers

In addition to training delivered as a full course by a Certified Instructor, the NCWM recognizes and awards EUs for training delivered by individuals who are registered with the NCWM as Qualified Trainers. The courses delivered must be approved by a Certified Instructor, A&P Committee, OWM, or the Trainer Subcommittee.

To become a Qualified Trainer, an individual must meet the following requirements:

- a. Attend a course in the subject matter that is delivered by OWM or a Certified Instructor; or demonstrate competency and experience in the subject area through documentation;
- b. Plan and present the subject course with satisfactory evaluations;
- c. Be nominated/recommended by a Certified Instructor who is certified in that subject area;

Administration and Public Affairs Committee

d. Agree to use the most current NCWM materials available for each subject area and train under the guidance and approval of a Certified Instructor.

e. Qualified Trainers will be expected to adhere to the principles and standards of the NTP in all training that the NCWM sanctions. Course modifications or redesign, such as short courses or those tailored specifically for a target group, must be performed under the supervision of, and approved by, a Certified Instructor in order to be eligible for NCWM recognition.

OWM will maintain a registry of NCWM Qualified Trainers as part of the training resource catalog.

E. Course Delivery

It is critical that the NCWM facilitate and promote a program that insures that enough Certified Instructors and Qualified Trainers are available for a comprehensive national delivery system. The goal of this plan is to have a Certified Instructor who is located in or readily available to each member regulatory jurisdiction, as well as in (or to) each associate membership organization that wants to participate in the National Training Program. Further, through the two-tiered approach of NCWM sanctioned training, it is a goal to be an open system while maintaining standards so that needed training resources are available. Therefore, the entire weights and measures community can benefit from participating in the training program.

Each type of training delivery to be sanctioned by the NCWM, whether by a Certified Instructor or Qualified Trainer, whether a full course, short course, correspondence course, or other type, is required to include assessment tools. This is to determine the effectiveness of the instruction, the benefit to the student, and any recommendations for improving the training. These tools will include student evaluation forms, instructor evaluation forms, and a tool for providing the administrators of the program (NCWM's A&P Committee) with updates and suggestions for improvement. Before NCWM awards any credits or recognition, all of these instructors must submit this documentation.

Instructor Training delivery currently depends on training grant funds given by NIST to NCWM. The A&P Chairman, as Principal Investigator, will keep the Conference and A&P Committee informed on the availability of grant funds for training. The main objective of this training plan is to allow the NCWM membership to vote on accepting the training courses. Once the members accept them, the training would be in a three-year cycle that allows jurisdictions to plan training in advance. Instructor Training Courses are normally offered in March/April and August/September each year.

1. Responsibilities:

- a. The A&P Committee will provide a prioritized list of at least four training subjects per year in order of priority to OWM at the Interim Meeting. The Committee will use the Trainer Subcommittee, Certified and Qualified Trainers, and Regional Association training requests, and NCWM surveys to determine class priority.
- b. OWM selects a minimum of two training subjects to develop and present. OWM will develop/update all training materials associated with the training subject. NIST will use OWM resources whenever possible along with input from the Training Subcommittee. Grant funds will pay for outside contracts.
- c. Schools will be held in the Washington, D.C. area whenever possible. Specialized training will be held in other areas as needed (i.e. Loading-Rack Meter Training at a Tank Farm). NCWM will receive all publications, handbooks, and materials necessary for training. OWM will provide certificates of training and NCWM Educational Units (EU's) to all students who successfully complete the training.
- d. Students will be reimbursed for travel expenses from the NIST Training Grant Funds for attending an OWM Instructor Training Course. Only individuals who meet prerequisites for Certified Instructor or Qualified Trainer Status, or for individuals who attend the course for reasons related to NTP improvement will be permitted to attend. NCWM must give prior approval for travel expense reimbursement for attendance.
- e. NIST Training Grant Funds will be available to NCWM Certified Instructors or Qualified Trainers who are approved by the A&P Committee or OWM. The grant will pay any expenses that are directly involved in delivering training courses to jurisdictions or industry groups.

F. Student Certification

To assure the integrity of the credentials awarded under the authority of the NCWM's National Training Program,

students must meet the criteria in each functional area under pre-established standards for Certification of students. Students will receive recognition, other than a Certificate, for attending training and successfully completing special training such as short courses based on NCWM NTP.

1. Students will receive NCWM Education Units (EUs) which OWM will track using the existing NCWM system. One (1) EU will be awarded for every ten (10) hours of NCWM approved sanctioned training. OWM will determine the number of EU credits for full Instructor OWM Training courses and subsequent delivery of the subject full-course training to students, field officials, and industry. For customized training, such as short courses, the A&P Committee will determine the number of EU hours to be awarded based on the recommendation of the Certified Instructor under which the course was designed or delivered.
2. For students to be eligible for certification in a particular subject or functional area, they must meet the following requirements:
 - a. Successfully complete of any prerequisites core courses, established by the NCWM curriculum;
 - b. Attend a full course for the minimum time with the approved content delivered by techniques and/or approved trainers as set by NCWM.
 - c. Successfully complete an examination that assesses subject matter competence;
 - d. Submit a completed Student Evaluation Form for the training course attended;
 - e. Be evaluated as competent based on an NCWM followup and field evaluation for each subject. The evaluation will be conducted by someone who is qualified to determine competency in the subject area. The evaluation will be completed using an NCWM approved checklist;
 - f. Nomination on an approved NCWM form with documentation of the above requirements having been met;

Individuals who successfully complete special courses, short courses, or other courses that are not full NCWM courses will receive recognition. An exam for subject matter competency will be required for all NCWM-sanctioned training. Students who attend such courses and successfully complete a competency exam will receive a "Certification of Completion" for the course. The certificate will include a course title that describes the course completed. The appropriate EUs (as determined by the A&P Committee or Trainer Subcommittee) will be awarded and tracked in the NTP registry maintained by OWM.

G. Resource Requirements

The NTP's strategic plan provides a framework for decisions and delivery regardless of the level of resources. However, in an effort to develop a comprehensive training resource for national needs, the Working Group suggests that a funding proposal be developed based on the following population characteristics and program component goals.

1. Population characteristics for Legal Metrology

Potential Students

| | |
|----------------------|-------------------------|
| Private Industry | 20,000 individuals |
| Public Jurisdictions | 749 State, County, City |
| Public Officials | 3,000 individuals |

Current Resources

| | |
|-----------------------|-------------|
| Certified Instructors | 15 trainers |
|-----------------------|-------------|

OWM Staff - 5 staff (does not include metrology and OWM staffs' other responsibilities).

2. Program Component and Goals for a Comprehensive NTP
 - a. Number of OWM trainers for Instructor Training

Administration and Public Affairs Committee

Goal: Enough staff or funds for contracting with Certified Instructors to maintain materials and conduct the various subjects and level of courses to keep Certified Instructors and Qualified Trainers available and current in each region.

b. Number of Certified Instructor and Qualified Trainers West/South, NE/Central

Goal: Enough available to keep training current within the regions for officials and private industry.

c. Number of trainer classes

Goal: Enough to meet needs of jurisdictions to maintain Certified Instructor and Qualified Trainer Standards.

d. Number of student courses

Goal: Adequate training opportunities are available so that only NCWM-certified officials work in an independent capacity in jurisdictions and that ample training opportunities are available for the private sector.

e. Number of courses and frequency of review and updating.

Goal: Materials maintained and updated prior to delivery without unnecessarily delaying a requested training program.

f. Trainer Subcommittee

Goal: Adequate funding for travel, materials, developing and fulfilling all NTP responsibilities.

Based on the above information and goals, the Working Group recommends that a key group of trainers and administrators be convened. They should develop a realistic budget proposal starting with this report. The Group's insight into existing program delivery, cost, and common needs will provide the groundwork for a credible proposal. The final budget should include the efforts of the Service Person Outreach Work Group and the Voluntary Program Assessment Work Group.

H. Work Plan Recommendations

The NTP Strategic Plan Work Group recommends the following to NCWM's Strategic Planning process.

1. With the Trainer Subcommittee reporting to the A&P Committee, move forward, as proposed at the Interim Meeting.
2. Rely on the A&P Committee to implement and develop any policy and administrative details. NCWM Publication 11 will require revision.
3. Establish a select group of individuals to complete a resource assessment to establish a budget. Members should include Legislature Liaison, Budget, OWM, AMC, and A&P.
4. Request that the Voluntary Program Assessment Work Group, the Service Person Outreach Work Group, and the Legislature Liaison by the A&P Committee coordinate NTP development.
5. Disband the NTP Strategic Plan Work Group. The Committee acknowledges the contributions of Barbara DeSalvo(Ohio), Max Gray (Florida), Richard Greek (San Luis Obispo County, California), Bruce Martell (Vermont), and James Ross (OWM) for their outstanding contributions to and participation in the efforts of this working group.

Appendix D
Certification Summary
(As of June 30, 1999)

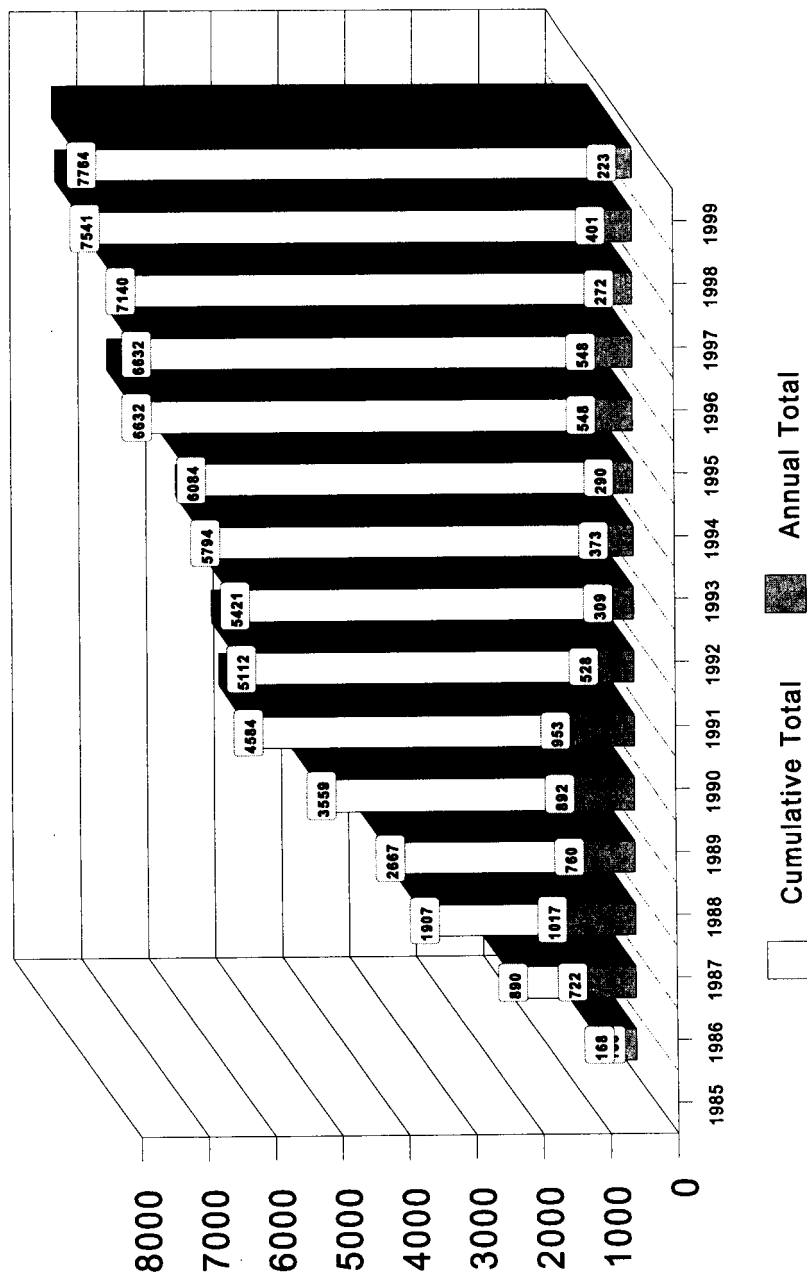
| State | Total No. of Certif. | Total No. of People | NTP Course No. | | | | | | | | | | |
|---------|----------------------------|---------------------------|----------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|
| | | | Mod 1* | 202 Mod 2 | 203 Mod 4 | 204 Mod 7 | 205 Mod 6 | 206 Mod 5 | 302 Mod 8 | 303 Mod 20 | 304 Mod 19 | 305 Mod 21 | 601 Mod 10 |
| AL | 43 | 24 | | 14 | 12 | 5 | | | 12 | | | | |
| AK | 23 | 13 | | 7 | | | | 1 | 10 | | | | 5 |
| AZ | 29 | 29 | | 28 | | | | 1 | | | | | |
| AR | 129 | 42 | 20 | 19 | | 9 | | 10 | 41 | 16 | | 2 | 12 |
| CA | 1 | | | | | | | 1 | | | | | |
| CO | 7 | 7 | | | | 7 | | | | | | | |
| CT | 86 | 30 | | 19 | 19 | | | 2 | 20 | 3 | 6 | 2 | 15 |
| DE | 5 | 5 | | | | | | | | | | | 5 |
| DC | 4 | 3 | | | | | | | 3 | | 1 | | |
| FL | 113 | 94 | 6 | 8 | 3 | 2 | | 7 | 58 | 7 | 6 | | 16 |
| GA | 29 | 24 | | | | 4 | | 8 | 17 | | | | |
| HI | 105 | 15 | | 11 | 12 | 11 | 11 | 11 | 12 | 12 | 12 | | 12 |
| IA | 1 | 1 | | | | 1 | | | | | | | |
| ID | 8 | 8 | | | | | | | 8 | | | | |
| IL | 17 | 17 | | 8 | | | | 9 | | | | | |
| IN | 154 | 78 | | 12 | | 17 | | 48 | 21 | 21 | | | 34 |
| KS | 29 | 16 | 7 | 7 | | | | 5 | 1 | | | | 9 |
| LA | 9 | 9 | | | | 8 | | | | | | | 1 |
| MD | 70 | 37 | | | | 6 | | | 27 | 33 | 4 | | |
| ME | 3 | 3 | | | | 2 | | 1 | | | | | |
| MA | 1 | 1 | | | | | | | 1 | | | | |
| MI | 48 | 20 | | | | 12 | | 9 | 6 | 14 | | 7 | |
| MN | 15 | 15 | | | | | | | 15 | | | | |
| MO | 48 | 45 | | | | | | 4 | 25 | | | | 19 |
| MT | 7 | 7 | | | | 7 | | | | | | | |
| NE | 42 | 19 | | 2 | | 7 | | 7 | 15 | | | | 11 |
| NV | 13 | 11 | | 1 | | 1 | | 1 | 9 | | | 1 | |
| NH | 32 | 8 | 6 | 5 | 5 | | | 2 | 6 | 8 | | | |
| NM | 38 | 24 | | 9 | | | | | 14 | | | 15 | |
| NC | 39 | 35 | | | | | | | 20 | | | | 19 |
| ND | 3 | 3 | | | | | | | 3 | | | | |
| OH | 360 | 130 | | 63 | 30 | 29 | | 53 | 90 | 52 | | 7 | 35 |
| OR | 54 | 18 | 16 | 15 | | | | 5 | 10 | | 1 | 1 | 6 |
| PA | 126 | 61 | | 44 | 4 | 7 | | 8 | 27 | 18 | | | 18 |
| PR | 91 | 49 | | 33 | | | | | 33 | | | | 25 |
| SD | 28 | 13 | | | 7 | | | 12 | 8 | | | | 1 |
| TN | 41 | 30 | | | | 6 | | 6 | 29 | | | | |
| UT | 83 | 25 | 16 | 17 | | 6 | | 6 | 15 | 10 | | 2 | 11 |
| VT | 24 | 10 | 4 | | 2 | 3 | | 6 | 7 | | 1 | | 1 |
| VI | 11 | 8 | | | | | | 6 | | | | | 5 |
| VA | 5 | 5 | | | | 3 | | | | | | 2 | |
| WA | 26 | 21 | | 10 | | | | | 15 | | | 1 | |
| WI | 4 | 4 | | | | | | | | | | 4 | |
| Other | | | | | | | | | | | | | |
| GIPSA** | 48 | 40 | | | | 36 | 6 | 6 | | | | | |
| Total | 2059 | 1070 | 75 | 332 | 94 | 189 | 17 | 236 | 577 | 194 | 31 | 44 | 260 |

* NTP Module 1 was incorporated in Module 2, now Course No. 202 (May 1994)

**USDA Grain Inspection/Packers and Stockyards Administration

Growth of NTP Registry

(Annual and Cumulative Data as of June 30, 1999)



NATIONAL TRAINING PROGRAM REGISTRY SUMMARY OF ACTIVITY

(As of June 30, 1999)

Courses Listed in Registry:

Introductory:Level 100

- 101Weights and Measures Regulation in the United States
- 102Introduction to Handbook 44
- 103Introduction to Electronic Weighing and Measuring Systems

Meters: Level 300

- 301Introduction to Meters (planned)
- 302Retail Motor-Fuel Dispensers and Consoles
- 303Vehicle-Tank Meters
- 304Loading-Rack Meters
- 305Liquefied Petroleum Gas Liquid-Measuring Devices

Scales: Level 200

- 201Introduction to Handbook 44 Scales Code (planned)
- 202Retail Computing Scales
- 203Medium-Capacity Scales
- 204Livestock and Animal Scales
- 205Meat Beams and Monorail Scales
- 206Vehicle and Axle-Load Scales

Measures: Level 400

- Other Devices:Level 500 (linear, taximeters, etc.)

Commodities:Level 600

- 601Checking the Net Contents of Packaged Goods
- 602Commodity Regulations

A&P-31

| Individuals Trained - by Course | | | | | | | | | | | | | | | |
|---------------------------------|-------------|-----------------------------|-----------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--------|
| State | Module 1... | Course Number | | | | | | | | | | | | | Totals |
| | | Course No. 101 Module 23 | Course No. 102 Module 24 | Course No. 103 Module 27 | Course No. 202 Module 2 | Course No. 203 Module 4 | Course No. 204 Module 7 | Course No. 205 Module 5 | Course No. 206 Module 5 | Course No. 302 Module 8 | Course No. 303 Module 20 | Course No. 304 Module 19 | Course No. 305 Module 21 | Course No. 601 Module 10 | |
| AL | | 12 | 26 | 15 | 12 | 4 | | 4 | 32 | | | | | | 105 |
| AK | | 6 | | 7 | | | | 1 | 16 | | | | | 12 | 42 |
| AZ | | | | 51 | | 30 | | 1 | 23 | | | 25 | 17 | 1 | 148 |
| AR | 20 | 13 | | 38 | | 8 | | 38 | 67 | 17 | | 3 | 12 | | 216 |
| CA | | | | | | 1 | | 1 | | | | | | | 2 |
| CO | | | | | | 11 | | | 1 | | | | 1 | | 13 |
| CT | | | | 31 | 20 | | | 2 | 28 | 6 | 12 | 2 | 18 | 26 | 145 |
| DE | | | | | 1 | 5 | | | | 2 | | | 5 | | 13 |
| DC | 4 | | | 4 | | | | | 3 | | 1 | | | | 12 |
| FL | 13 | 43 | 41 | 29 | 18 | 10 | | 16 | 82 | 8 | 8 | | 39 | | 307 |
| GA | | | 7 | | 11 | 4 | | 8 | 17 | | | | | | 47 |
| HI | | | 4 | 12 | 12 | 11 | 11 | 11 | 12 | 11 | 12 | | 24 | 6 | 127 |

| Individuals Trained - by Course | | | | | | | | | | | | | | | | | |
|---------------------------------|-------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--------|-----------------------------|
| State | Module 1... | Course Number | | | | | | | | | | | | | | Totals | |
| | | Course No. 101 Module 23 | Course No. 102 Module 24 | Course No. 103 Module 25 | Course No. 103 Module 27 | Course No. 202 Module 2 | Course No. 203 Module 4 | Course No. 204 Module 7 | Course No. 205 Module 6 | Course No. 205 Module 8 | Course No. 302 Module 5 | Course No. 303 Module 20 | Course No. 304 Module 19 | Course No. 305 Module 21 | Course No. 601 Module 10 | | Course No. 602 Module 22 |
| ID | | | | 8 | 9 | 10 | | | 46 | 10 | | | | 12 | 11 | 10 | 117 |
| IL | | | | | 8 | 1 | 2 | 6 | 9 | 23 | | | | | 2 | 1 | 52 |
| IN | | 48 | 48 | 48 | 56 | 46 | 20 | | 65 | 104 | 44 | | | 2 | 37 | 27 | 497 |
| IA | | | | | 10 | | 5 | 9 | 17 | 4 | | | | | 9 | 2 | 56 |
| KS | 9 | 3 | 8 | 8 | 10 | 14 | 6 | | 6 | 18 | 2 | | | | 32 | | 108 |
| KY | 8 | | | | 8 | 1 | | | 5 | 19 | | | | | 16 | | 57 |
| LA | | | | | | | 8 | | | | | | | | 1 | | 9 |
| ME | | | 4 | | | 3 | 2 | | 11 | 14 | | | 6 | | | | 40 |
| MD | | 6 | | 29 | | 6 | | | | 28 | 33 | 4 | | | | 4 | 110 |
| MA | | | 12 | 23 | 4 | | | | 7 | 41 | 31 | 2 | 4 | 3 | 3 | 1 | 128 |
| MI | | 94 | 53 | 50 | | | 21 | 2 | 38 | 8 | 22 | | 13 | 29 | | | 330 |
| MN | | | | | | | 2 | | | 12 | | 2 | 3 | | 1 | | 20 |
| MS | | | | | | 2 | 3 | | 3 | 2 | | | | | | | 10 |
| MO | 3 | 63 | 22 | | | 13 | 2 | | 8 | 44 | | | | 27 | | | 182 |
| MT | | | | | | 5 | 7 | | 10 | 6 | | | 1 | | | | 37 |
| NE | 16 | 19 | 27 | 17 | 4 | 7 | 14 | 30 | 35 | | | | 2 | 18 | | | 204 |
| NV | | 11 | 8 | 1 | | 1 | | | 1 | 12 | | | 1 | | 15 | | 35 |
| NH | 6 | | 6 | 5 | 7 | | | | 3 | 7 | 8 | | 2 | | | | 44 |
| NJ | | | 172 | 21 | 21 | | | | | 108 | 109 | | | | | | 431 |
| NM | | | | 20 | | 13 | | | | 23 | | | 19 | 25 | | | 100 |
| NY | | | | 74 | | | | | | | | | | | | | 175 |
| NC | | | | | | | 2 | | | 18 | | | | 19 | 16 | | 57 |
| ND | | | 12 | | | | | 2 | | 3 | | 3 | 3 | | | | 21 |
| OH | 56 | 82 | 125 | 130 | 91 | 45 | | 4 | 75 | 154 | 64 | 11 | 10 | 56 | 12 | 915 | 915 |
| OK | | 17 | 2 | | 2 | | | | 4 | 5 | | | | 22 | | | 52 |
| OR | 18 | 23 | 16 | 17 | | | | | 8 | 24 | 13 | 1 | | 29 | 23 | 19 | 184 |
| PA | 34 | 27 | 82 | 132 | 51 | 8 | | | 14 | 152 | 25 | | | 1 | 58 | 19 | 603 |
| PR | | 38 | 20 | 32 | | | | | | 33 | | | | 24 | | | 147 |
| RI | | | | 1 | | | | | 1 | | 1 | | | | | | 3 |

Individuals Trained - by Course

| State | Module 1** | Course Number | | | | | | | | | | | | | | Totals |
|---|------------|-----------------------------|-----------------------------|-----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--------|
| | | Course No. 101 Module 23 | Course No. 102 Module 24 | Course No. 103 Module 27 | Course No. 202 Module 2 | Course No. 203 Module 4 | Course No. 204 Module 7 | Course No. 205 Module 6 | Course No. 206 Module 5 | Course No. 302 Module 8 | Course No. 303 Module 20 | Course No. 304 Module 19 | Course No. 305 Module 21 | Course No. 601 Module 10 | Course No. 602 Module 22 | |
| SC | | | | | 25 | | 2 | | | 28 | | | | | 55 | |
| SD | | | 10 | | | 7 | 10 | | 12 | 8 | | 1 | 10 | 10 | 68 | |
| TN | | | 5 | 27 | | | 6 | | 6 | 32 | | | | | 76 | |
| TX | | | 5 | | 25 | | 8 | | 12 | 24 | | 4 | | | 78 | |
| UT | 17 | 7 | 18 | 17 | 22 | 14 | 17 | | 12 | 19 | 10 | 2 | 20 | | 165 | |
| VT | 6 | | 5 | | | 3 | 3 | | 9 | 11 | | 1 | 1 | 2 | 43 | |
| VI | | 5 | | | | | | | 6 | 6 | | 2 | 6 | | 23 | |
| VA | | 39 | 10 | 43 | | 24 | 5 | | 16 | 26 | 25 | | 4 | 38 | 230 | |
| WA | 13 | | 12 | 16 | 13 | | 16 | | 18 | 21 | | 3 | 10 | 14 | 120 | |
| WV | | | | | | | 3 | | | | | | | | 3 | |
| WI | 56 | | 25 | 65 | 61 | | 31 | | 19 | 40 | 26 | | 10 | 43 | 360 | |
| WY | | | 11 | 3 | | 11 | | | | 18 | | | 16 | | 60 | |
| Other | | | | | | | | | | | | | | | | |
| Associate Members | | | 3 | | | | 1 | 1 | | 6 | | 8 | 3 | 10 | 32 | |
| FGIS* | | | | 13 | | | | | | | | | | | 13 | |
| GIPSA** | | | | 3 | | | 33 | 11 | 5 | | | | | | 52 | |
| Total Trained | 204 | 126 | 584 | 891 | 1019 | 398 | 364 | 59 | 559 | 1427 | 458 | 65 | 192 | 770 | 179 | 7295 |
| Percent of Total Certified ¹ | 37% | N/A | N/A | N/A | 32% | 27% | 54% | 36% | 42% | 44% | 42% | 57% | 23% | 31% | NA | 39% |

* Federal Grain Inspection Service

** USDA Grain Inspection/Packers and Stockyards Administration

¹A total of 2,059 certificates have been awarded to 1,070 individuals under the NTP Certification Program.

***Module 1 was incorporated in Course 202 in 1994.

NATIONAL TRAINING PROGRAM REGISTRY SUMMARY OF METROLOGY SEMINAR ACTIVITY

(As of June 30, 1999)

Courses Listed in the NTP Registry:

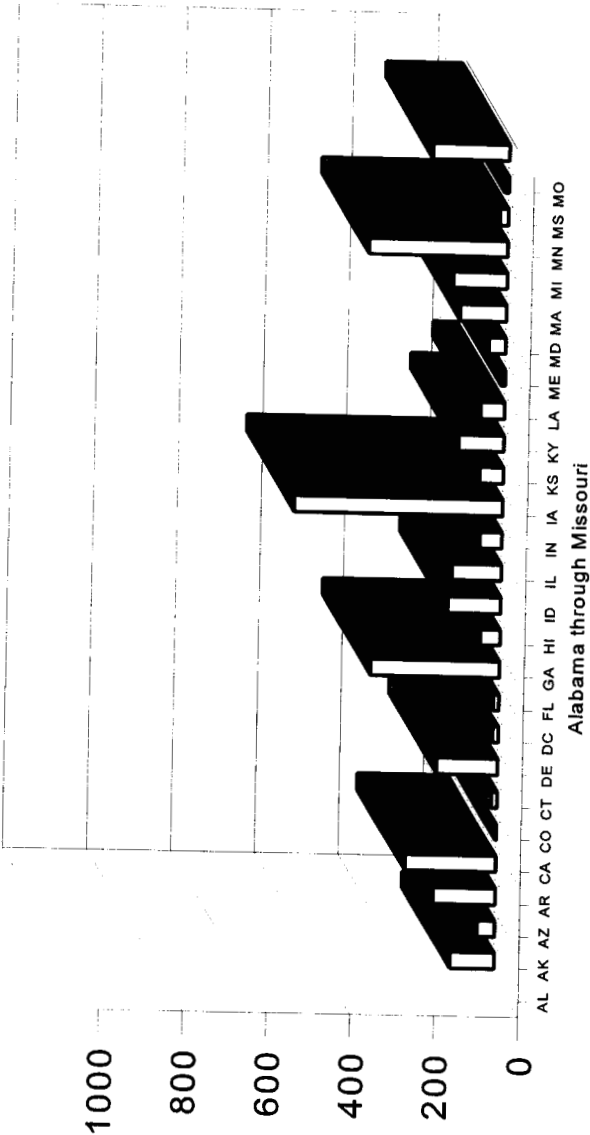
No. 201, Basic Metrology I
No. 202, Basic Metrology II

No. 203, Intermediate Metrology
No. 204, Advanced Metrology

| Individuals Trained by Course | | | | | |
|-------------------------------|------------|-----|-----|-----|--------|
| | Course No. | | | | |
| State | 201 | 202 | 203 | 204 | Totals |
| AL | | 1 | | | 1 |
| AK | 1 | 2 | 2 | | 5 |
| AZ | 3 | 3 | 3 | 1 | 10 |
| CA | 1 | 1 | 4 | 1 | 7 |
| CO | 2 | 2 | 1 | | 5 |
| CT | | | 2 | | 2 |
| DE | 1 | 1 | 2 | 1 | 5 |
| FL | 4 | 4 | | 1 | 9 |
| GA | 1 | 1 | 1 | | 3 |
| HI | 2 | 2 | | | 4 |
| ID | 1 | 1 | 1 | | 3 |
| IL | 5 | 4 | 1 | | 10 |
| IN | 1 | 1 | 2 | | 4 |
| IA | 1 | 1 | 1 | | 3 |
| KS | 2 | 2 | 2 | 1 | 7 |
| KY | 2 | 2 | | | 4 |
| ME | 4 | 4 | 1 | | 9 |
| MD | 8 | 8 | 8 | | 24 |
| MA | 1 | 1 | | | 2 |
| MI | 1 | 1 | 3 | | 5 |
| MN | 1 | | 3 | 1 | 5 |
| MS | 2 | 2 | 3 | | 7 |
| MO | 2 | 2 | 1 | | 5 |
| NE | | | 2 | | 2 |
| NV | 1 | 1 | | | 2 |
| NH | 1 | 1 | 1 | | 3 |
| NJ | | | 1 | | 1 |

| Individuals Trained by Course | | | | | |
|--------------------------------------|-------------------|------------|------------|------------|---------------|
| | Course No. | | | | |
| State | 201 | 202 | 203 | 204 | Totals |
| NM | 1 | 1 | 1 | | 3 |
| NY | 2 | 2 | 2 | 1 | 7 |
| NC | 10 | 7 | 4 | 2 | 23 |
| ND | 2 | 2 | 2 | | 6 |
| OH | 2 | 2 | 1 | | 5 |
| OK | | | 1 | 2 | 3 |
| OR | 1 | 1 | | 1 | 3 |
| PA | 1 | 1 | 2 | | 4 |
| PR | 3 | 3 | 5 | | 12 |
| RI | 1 | 3 | | | 4 |
| SC | 2 | 2 | 1 | | 5 |
| SD | 1 | 1 | | | 2 |
| TN | 3 | 3 | 1 | | 7 |
| TX | 3 | 3 | 3 | | 9 |
| UT | | 1 | | | 1 |
| VT | | | 1 | | 1 |
| VA | 4 | 4 | 3 | | 11 |
| WA | 1 | 1 | 2 | 1 | 5 |
| WV | 3 | 3 | 2 | | 8 |
| WI | | | 2 | | 2 |
| Other | | | | | |
| Canada | | | 2 | | 2 |
| Associate Members | 89 | 18 | 37 | 22 | 166 |
| GIPSA | 6 | 1 | | | 7 |
| Totals | 183 | 107 | 117 | 36 | 443 |

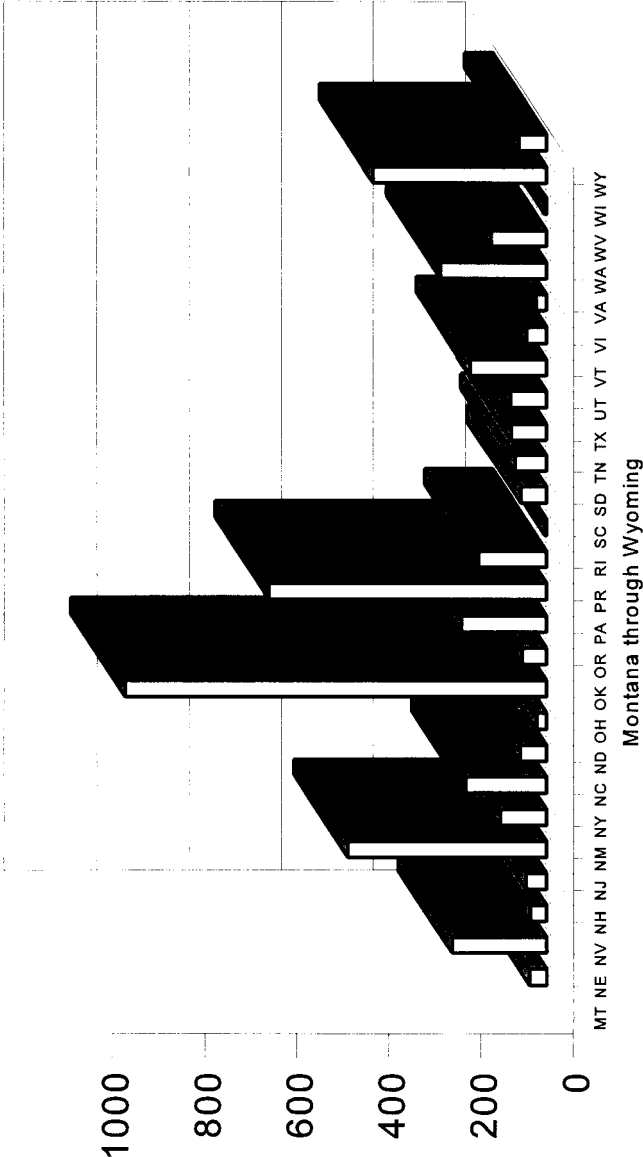
NTP Registry Activity by State
As of June 30, 1999



☐ Course Entries by State

NTP Registry Activity by State

As of June 30, 1999



Course Entries by State

(As of June 30, 1999)
Continuing Education Units (CEUs/NCWM EUs) Awarded***
By the National Conference on Weights and Measures

| Module Number | NCWM EUs /CEU's ** | No. of Participants | 1985 Total | 1986 Total | 1987 Total | 1988 Total | 1989 Total | 1990 Total | 1991 Total | 1992 Total | 1993 Total | 1994 Total | 1995 Total | 1996 Total | 1997 Total | 1998 Total | 1999 Total | Grand Total |
|---------------|--------------------|---------------------|---------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-----------------|
| 1 | 3.1 | 204 | | 306.90 | 77.50 | 117.80 | 99.20 | 24.80 | | 3.10 | 3.10 | | | | | | | 632.40 |
| 2 | 3.1* | 994 | | 65.10 | 857.90 | 759.50 | 173.60 | 244.90 | 31.00 | 297.60 | 3.10 | 12.40 | 164.30 | 24.80 | 161.20 | 204.60 | 77.50 | 3077.50 |
| 4 | 3.1 | 385 | | | | 492.90 | 198.40 | 170.30 | 145.70 | | | | 74.40 | | 15.50 | 96.10 | 40.30 | 1233.80 |
| 5 | 3.1 | 553 | | | 96.10 | 133.30 | 381.30 | 217.00 | 220.10 | 18.60 | 52.70 | 55.80 | 89.90 | 75.60 | 263.50 | 99.20 | 18.60 | 1721.70 |
| 6 | 3.1 | 48 | | | 12.40 | | | 55.80 | | 15.50 | 6.20 | | 31.00 | | 27.90 | | 34.10 | 182.90 |
| 7 | 3.1 | 348 | | | 12.40 | | 248.00 | 117.80 | 80.60 | 80.60 | 130.20 | 43.40 | 179.80 | 99.20 | 12.40 | 74.40 | 49.60 | 1128.40 |
| 8 | 2.8 | 1359 | | 288.40 | 856.80 | 260.40 | 739.20 | 324.80 | 112.00 | 158.80 | 252.00 | 50.40 | 170.80 | 215.60 | 98.60 | 280.00 | 190.40 | 3995.60 |
| 10 | 2.8 | 749 | 75.60 | 372.40 | 302.40 | 128.80 | 417.20 | 120.40 | 148.40 | 123.20 | 177.20 | 27.70 | 16.80 | 39.20 | 53.20 | 95.20 | 63.00 | 2160.70 |
| 19 | 3.5 | 54 | | | | | | 59.50 | 49.00 | 38.50 | | | 21.00 | 17.50 | 3.50 | | 38.50 | 227.50 |
| 20 | 2.8 | 458 | | | 156.80 | 109.20 | | 338.80 | 92.40 | | | 254.80 | 176.40 | 14.00 | 2.80 | 28.00 | | 1282.40 |
| 21 | 3.5 | 192 | | | 105.00 | 129.50 | 147.00 | 52.50 | 31.50 | | 42.00 | 52.50 | 3.50 | 3.50 | 79.80 | 24.50 | | 671.30 |
| 22 | 2.45 | 179 | | | | | | 230.30 | 191.10 | 2.45 | | | 14.70 | | | | | 438.55 |
| 23 | 1.00 | 124 | | | | | 15.00 | 402.00 | 156.00 | 34.50 | 57.00 | 36.00 | 6.00 | 4.00 | 3.00 | 18.50 | 2.00 | 126.50 |
| 24 | 1.5 | 583 | | | | | | | | | 34.50 | 84.00 | 93.10 | 22.50 | 10.50 | 15.00 | 1.50 | 877.60 |
| 27 | 1.1 | 888 | 155.10 | 402.60 | 165.00 | 66.00 | 36.30 | 22.00 | | 24.20 | 53.90 | 16.50 | 1.10 | 15.40 | 2.20 | 16.50 | 3.30 | 980.10 |
| Totals | | 7118 | 230.70 | 1435.40 | 2642.30 | 2197.40 | 2564.40 | 2381.10 | 1257.80 | 795.05 | 811.90 | 633.50 | 1042.8 | 531.30 | 733.50 | 962.00 | 518.80 | 18736.96 |

*One Module 2 class with 74 participants was given only 2.00 CEU's.

** One NCWM EU or CEU is equivalent to 10 contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction.
 *** Effective August 31, 1997, the NIST Office of Weights and Measures assumed responsibility for tracking and documenting NTP Training Course activity and awarding of NCWM EUs (ACT Registry Service ceased offering that service on that date).

Continuing Education Units (CEUs/NCWM EUs) Awarded*
By the National Conference on Weights and Measures
For Attendance at OWM Metrology Seminars**

(As of June 30, 1999)

| Course No.* | No. of NCWM EUs/CEUs** | Participants | 1990 Total | 1991 Total | 1992 Total | 1993 Total | 1994 Total | 1995 Total | 1996 Total | 1997 Total | 1998 Total | 1999 Total | Grand Totals |
|--------------------|-------------------------------|---------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|---------------------|
| 201 | 3.60 | 157 | 97.20 | 54.00 | 7.20 | 28.80 | | 244.30 | 72.00 | 39.60 | 21.60 | 90.00 | 654.70 |
| 202 | 3.50 | 102 | 101.50 | 52.50 | 14.00 | 28.00 | | 129.50 | 10.50 | | 21.10 | 17.50 | 374.60 |
| 203 | 3.10 | 102 | 49.60 | 40.30 | 37.60 | 6.20 | | 151.90 | 31.00 | | | 46.50 | 363.10 |
| 204 | 2.50 | 36 | | | | 5.00 | | 42.50 | | 37.50 | 4.75 | | 89.75 |
| Totals | | 397 | 248.30 | 146.80 | 58.80 | 68.00 | None | 568.20 | 113.50 | 77.10 | 47.45 | 154.00 | 1482.15 |

* Course No. 201: Basic Metrology I
Course No. 202: Basic Metrology II
Course No. 203: Intermediate Metrology
Course No. 204: Advanced Metrology

** One NCWM EU or CEU is equivalent to 10 contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction.
*** Effective August 31, 1997, the NIST Office of Weights and Measures assumed responsibility for tracking and documenting of NTP Training Course activity and awarding of NCWM EUs (ACT Registry Service ceased offering that service on that date).

NATIONAL TRAINING PROGRAM REGISTRY SUMMARY OF NIST-NCWM INSTRUCTOR TRAINING PROGRAMS

(As of June 30, 1999)

Courses listed in the NTP Registry and total NCWM Educational Units (EUs) awarded:

No. 207, Retail Computing Scales 3.10 EUs
 No. 306, Liquefied Petroleum Gas Liquid-Measuring Devices 3.5 EUs
 No. 307, Retail Motor-Fuel Dispensers and Consoles 2.8 EUs
 No. 501, National Type Evaluation Program (NTEP) 2.2 EUs
 No. 603, Handbook 133, Checking the Net Contents of Packaged Goods 3.5 EUs
 No. 604, Price Verification 2.2 EUs

| Individuals Trained by Course | | | | | | | |
|-------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|-------|
| Sponsor | Course No. 207 | Course No. 306 | Course No. 307 | Course No. 501 | Course No. 603 | Course No. 604 | Total |
| NIST-NCWM | 52 | 14 | 42 | 27 | 146 | 91 | 372 |

| Total NCWM Educational Units Awarded | | | | | | |
|--------------------------------------|----------------|----------------|----------------|----------------|----------------|---------|
| Course No. 207 | Course No. 306 | Course No. 307 | Course No. 501 | Course No. 603 | Course No. 604 | Total |
| 175.6 | 49.00 | 117.60 | 59.40 | 511.00 | 200.20 | 1112.80 |

ALABAMA

Steadman Hollis Handbook 133
 Frank Gissendanner Price Verification
 Handbook 133

ALASKA

Scott Bowen NTEP
 Mike Campbell Handbook 133
 Retail Computing Scales
 John M. Landis NTEP
 Mike Nethercott Price Verification

ARIZONA

Carson Keith NTEP
 John Moore Handbook 133
 NTEP
 Price Verification
 David A. Turner Retail Computing Scales

ARKANSAS

Tim Chesser NTEP
 Handbook 133
 Roger Frazier Retail Motor Fuel Dispensers
 Price Verification
 Richard Slater Retail Computing Scales
 Harlin Wheeler Handbook 133

CALIFORNIA

Thomas Bloomer Retail Computing Scales
 Steve Clay Handbook 133
 James Delperdang Retail Computing Scales
 Marianne Delperdang Price Verification
 Richard Greek NTEP
 Dennis Johannes Handbook 133
 Price Verification
 Michael Kelly Retail Motor-Fuel Dispensers
 Roger Macey Handbook 133
 Brett Saum LPG

COLORADO

| | |
|----------------|-------------------------|
| Robert Athearn | Handbook 133 |
| | Price Verification |
| Scott Boyd | NTEP |
| Douglas Jones | NTEP |
| Dennis McCrary | Retail Computing Scales |
| Howard Noble | Handbook 133 |

CONNECTICUT

| | |
|------------------|-------------------------|
| William Donahoe | Handbook 133 |
| Frank Forrest | Retail Computing Scales |
| Thomas Phelps | LPG |
| | Handbook 133 |
| Charles R. Smith | Price Verification |
| Peter Wilson | Handbook 133 |

DELAWARE

| | |
|-------------------|--------------------|
| Steve Connors | Handbook 133 |
| Anthony Deserto | LPG |
| | NTEP |
| | Price Verification |
| William Lagemann | Price Verification |
| Stephen Nickerson | Handbook 133 |

DISTRICT OF COLUMBIA

| | |
|---------------|-------------------------|
| Jeffrey Mason | Handbook 133 |
| | Price Verification |
| | Retail Computing Scales |

FLORIDA

| | |
|-----------------|------------------------------|
| Carlos D'Arcy | Handbook 133 |
| Fred Derby | Handbook 133 |
| Robert Garriss | NTEP |
| | Price Verification |
| Steve Hadder | Retail Motor-Fuel Dispensers |
| Don M. Williams | Price Verification |
| | Retail Computing Scales |
| Bryan Yongue | Handbook 133 |

GEORGIA

| | |
|----------------|------------------------------|
| Sam Burtz, Jr. | Price Verification |
| Tony Davis | Retail Motor-Fuel Dispensers |
| Jerry Flanders | Handbook 133 |
| Oscar Garrison | Handbook 133 |

HAWAII

| | |
|--------------|-------------------------|
| Earl Payanal | Retail Computing Scales |
| | NTEP |

Dianne Yamamoto

Price Verification
Handbook 133

IDAHO

| | |
|---------------|------------------------------|
| Mike Hartruff | Retail Motor-Fuel Dispensers |
| Kevin Merritt | Handbook 133 |
| | Price Verification |
| | Retail Computing Scales |
| | NTEP |
| Mike Proctor | |

ILLINOIS

| | |
|-----------------|------------------------------|
| Richard Philmon | Handbook 133 |
| | Retail Motor-Fuel Dispensers |
| Greg Plym | LPG |
| Tad Tucker | Handbook 133 |
| | Retail Computing Scales |
| Kyran Wagenecht | Retail Computing Scales |

INDIANA

| | |
|----------------------|------------------------------|
| Jerry Clingaman, Jr. | Handbook 133 |
| | Retail Computing Scales |
| Sherry Fowlkes | NTEP |
| Michael Horan | Handbook 133 |
| | Retail Computing Scales |
| | Price Verification |
| Michelle I. Phillips | Retail Motor-Fuel Dispensers |

IOWA

| | |
|------------------|------------------------------|
| Darryl Brown | Retail Computing Scales |
| | Price Verification |
| | Handbook 133 |
| | Retail Motor Fuel Dispensers |
| | NTEP |
| Susan Bulver | Price Verification |
| Ivan Hankins III | Handbook 133 |
| Michael Norris | NTEP |
| | Retail Computing Scales |
| Charles Oakley | Retail Computing Scales |
| Arlyn Oman | Handbook 133 |
| | NTEP |
| | Retail Motor-Fuel Dispensers |
| | LPG |
| Ralph Venteicher | |

KANSAS

| | |
|----------------|------------------------------|
| Jim Behrendt | Retail Motor-Fuel Dispensers |
| Teg Chaffee | Retail Computing Scales |
| Terry Davis | NTEP |
| Chris Farthing | Retail Computing Scales |

Maureen Henzler Handbook 133
Price Verification
Retail Computing Scales
Lewis Hutfles LPG
Robert Schneider Retail Motor Fuel Dispensers
Charles Stutesman NTEP

KENTUCKY

Robert Ginter Retail Motor-Fuel Dispensers
James Kemp Handbook 133
Luther Nall Retail Computing Scales
Randy Wise Handbook 133
Price Verification

LOUISIANA

Archie Lambert Retail Motor Fuel Dispensers
Isaiah Lawson Handbook 133
Price Verification
Danny McCartney NTEP
Retail Computing Scales
Handbook 133

MAINE

John Cunningham Retail Computing Scales
Price Verification
Danny Newcombe Price Verification
Harold Prince Handbook 133
NTEP

MARYLAND

Eugene Baumann Handbook 133
Robert Eaves Handbook 133
Price Verification
Thomas Fagan Jr. Handbook 133
Michael Frailer Handbook 133
Retail Computing Scales
Dale Godfrey Retail Motor-Fuel Dispensers
Lisa Griffith Handbook 133
William Hall Handbook 133
Mark Lambert Handbook 133
Donald Mason Handbook 133
Price Verification
LPG
Barbara Miller Handbook 133
Edward Payne, Jr. Handbook 133
Price Verification
Retail Computing Scales
NTEP
James Price III Handbook 133
Kenneth Ramsburg Handbook 133
Price Verification
LPG

Leila Smith Retail Computing Scales
Will Wothlie Retail Motor Fuel Dispensers
NTEP
Handbook 133
LPG
Retail Computing Scales
NTEP

MASSACHUSETTS

Stephen Agostinelli Handbook 133
Retail Motor Fuel Dispensers
Stephen Berard Handbook 133
Price Verification
Retail Computing Scales
Mark Coyne (Brockton) Retail Computing Scales
Handbook 133
NTEP
Thomas Hansbury Retail Motor-Fuel Dispensers
Robert McGrath (Boston) Handbook 133
NTEP
David Niemczura Retail Motor-Fuel Dispensers
Richard Oliver Retail Computing Scales
Harvey Paclat (Boston) Handbook 133

MICHIGAN

Robert DeRubeis Retail Computing Scales
Terry Gawel Price Verification
Retail Computing Scales
Frank Iacopeli Handbook 133
Brad Pagrati Price Verification
Ed Paladi Handbook 133
Michael Pinagel Handbook 133
Price Verification
LPG
Retail Computing Scales
NTEP
Dennis Ross Handbook 133
Judi VanScott NTEP
Price Verification
Retail Motor-Fuel Dispensers
Tim White NTEP

MINNESOTA

Roger Menk Handbook 133
Julie Quinn Price Verification

MISSISSIPPI

Harold Baughman Price Verification
Ralph Blake Handbook 133
Price Verification
Retail Computing Scales
Gerald Broom LPG

William E. Burgess, Jr. Price Verification
Sammy Lang Handbook 133

MISSOURI

Wayne Fritts Retail Computing Scales
Handbook 133
Price Verification
Dwain Snider NTEP

MONTANA

Randy Griswold Price Verification
Jack Kane Handbook 133
LPG
NTEP
Retail Motor Fuel Dispensers
LPG
Alfred Page Handbook 133
Fred Steinbacher Retail Computing Scales
H. Ray Waylett

NEBRASKA

Scott Arner LPG
Don Onwiler NTEP
Retail Motor Fuel Dispensers
Retail Computing Scales
Terrence Powell Handbook 133

NEVADA

Kevin Coyne Handbook 133
Retail Computing Scales
Retail Motor-Fuel Dispensers
George Dorsa Price Verification
Edward M. Hoganson Handbook 133
NTEP
Retail Computing Scales
Price Verification
David M. Scheller Price Verification

NEW HAMPSHIRE

Richard Cote Price Verification
Handbook 133
Retail Computing Scales
Jeff Wentworth Price Verification
Ernest T. West Handbook 133
Kevin Young LPG

NEW JERSEY

Robert Alviene Handbook 133
John McGuire Handbook 133
Joseph Romano Price Verification

NEW MEXICO

Joe Gomez NTEP
Price Verification
Handbook 133
LPG
Wilfred Mendoza Handbook 133
Johnny M. Peralta Price Verification
Steve Sumner Retail Computing Scales
David Turning Retail Motor-Fuel Dispensers

NEW YORK

Steven A. Martin Price Verification
Michael Sikula Handbook 133

NORTH CAROLINA

Gerald Brown Price Verification
Handbook 133
Retail Computing Scales
Jerry Butler NTEP
Retail Computing Scales
William Nelson Handbook 133
Donnie Perry Handbook 133
James L. Skipper Retail Motor-Fuel Dispensers

NORTH DAKOTA

William Bianco, Sr. Handbook 133

OHIO

Barbara DeSalvo Handbook 133
John R. Gray Handbook 133
Thomas Kamphaus Price Verification
Roger Lawson Handbook 133
Kenneth Wheeler Retail Computing Scales
Jeffrey Yankosky (Cincinnati) Handbook 133

OKLAHOMA

Charles Carter Handbook 133
Retail Computing Scales
Price Verification

OREGON

| | |
|--------------------|-------------------------|
| Clark Cooney | LPG |
| Henry Lasher | Retail Computing Scales |
| Christine A. Parks | Handbook 133 |
| James E. Ross | NTEP |
| Russ Wyckoff | NTEP |

| |
|-------------------|
| Retail Motor Fuel |
| Dispensers |

PENNSYLVANIA

| | |
|-----------------------------------|------------------------------|
| Robert Bonner | Price Verification |
| Charles Bruckner | Price Verification |
| Marinne Caszatt | Price Verification |
| | Handbook 133 |
| | Retail Computing Scales |
| | Retail Motor Fuel Dispensers |
| | NTEP |
| Michele DeMarshall (Philadelphia) | Handbook 133 |
| | Price Verification |
| | Retail Computing Scales |
| Dean Ely | LPG |
| | Price Verification |

PENNSYLVANIA (continued)

| | |
|----------------------------------|------------------------------|
| Rick A. Fogal | Handbook 133 |
| | Price Verification |
| | Handbook 133 |
| Bradley Lundberg | Price Verification |
| | Retail Motor Fuel Dispensers |
| Allen W. Martin | Retail Computing Scales |
| Michael McGoff | Price Verification |
| Donald McGowan | Price Verification |
| George Mensch | Price Verification |
| Anthony Pagano | Price Verification |
| Edward Petricca | Price Verification |
| Steven Reilly (Bucks County) | Handbook 133 |
| Ronald Roof | Price Verification |
| Douglas Rudy | Price Verification |
| Danielle Shiako | Price Verification |
| Joshua Stephanian | Price Verification |
| A. Courtney Yelle (Bucks County) | Price Verification |

PUERTO RICO

| | |
|------------------------|--------------|
| Otilio Rodriguez Colon | Handbook 133 |
|------------------------|--------------|

RHODE ISLAND

| | |
|----------------------|--------------------|
| Bernard Augustine | Price Verification |
| Lynda Agresti Maurer | Handbook 133 |

SOUTH CAROLINA

| | |
|----------------|-------------------------|
| David Ellisor | Price Verification |
| | Handbook 133 |
| | Retail Computing Scales |
| | NTEP |
| Ronnie P. West | Price Verification |

SOUTH DAKOTA

| | |
|-------------|------------------------------|
| Dick Bowman | Handbook 133 |
| Ralph Busch | NTEP |
| | Retail Motor Fuel Dispensers |

TENNESSEE

| | |
|--------------------|------------------------------|
| Gary Cloyd | Handbook 133 |
| Charles E. Coleman | Handbook 133 |
| | Price Verification |
| | Retail Computing Scales |
| | Retail Motor Fuel Dispensers |
| | Handbook 133 |
| Dale Drinnon | Handbook 133 |
| Rickey Freeman | Handbook 133 |
| Randy Jennings | LPG |
| William LaFont | H 133 |
| Danny Ray Scott | Retail Computing Scales |
| | Handbook 133 |
| | NTEP |
| James Thompson | Handbook 133 |
| Robert G. Williams | NTEP |
| | Price Verification |
| Clyde E. Woods | Handbook 133 |

TEXAS

| | |
|------------------|------------------------------|
| Debborah Danford | Handbook 133 |
| Harvey Fischer | Handbook 133 |
| | Retail Motor-Fuel Dispensers |
| Oscar Garrison | Handbook 133 |
| Pete Holcombe | Price Verification |
| Sally Preston | Handbook 133 |
| Edwin J. Price | Price Verification |
| | Handbook 133 |
| Richard Rendon | Retail Computing Scales |
| Damon Slaydon | Handbook 133 |
| | NTEP |
| | Price Verification |
| | Retail Computing Scales |
| | LPG |

UTAH

| | |
|--------------|--------------|
| Mark Deming | NTEP |
| Brett Gurney | Handbook 133 |

Mitzi Hansen Price Verification
Dale Kunze Retail Motor-Fuel Dispensers
David Paice Retail Computing Scales

VERMONT

Greg Ballou Retail Motor-Fuel Dispensers
Raymond Cioffi NTEP
 Handbook 133
James Cameron Handbook 133
Hugh Lund Price Verification

VIRGINIA

John L. Bates Price Verification
G. Weston Diggs Handbook 133
Jeff Rogers Handbook 133

VIRGIN ISLANDS

Collin Brooks Price Verification
Archie Corbitt Handbook 133

WASHINGTON

John Allen Handbook 133
 LPG
Tim Douglass (Seattle) Price Verification
Bruce Feagan (Seattle) Handbook 133
 Retail Computing Scales
Arthur Fluharty Price Verification
Mike Mann Retail Computing Scales
Rick Mulcahy Retail Computing Scales
Keith Stoner (Seattle) Retail Motor Fuel Dispensers

WEST VIRGINIA

Stephen Casto LPG
 Retail Computing Scales
 Handbook 133
 NTEP
William A. Cobb Handbook 133
 Price Verification
Dennis F. Harrison Retail Motor Fuel Dispensers

WISCONSIN

Kathryn Dresser Price Verification
 Handbook 133
 Retail Computing Scales
 NTEP
 Retail Motor Fuel Dispensers

WYOMING

Kim W. Decker Handbook 133
Quince Olsen Handbook 133
Albie Mickelson Retail Motor-Fuel Dispensers
Ron Weber Handbook 133

Albania

Dritan Meta Retail Motor-Fuel Dispensers

Tanzania, East Africa

Rose Katabi Retail Computing Scales
 Retail Motor Fuel Dispensers

Wayne Division -Dresser Industries

Cheryl Forster Retail Motor-Fuel Dispensers
Dale Godfrey Retail Motor-Fuel Dispensers

Appendix E

Associate Membership Training Scholarship Funds Activity

(Funds must be distributed by September 30, 1999)

| State | Region | Type of Training | Date of Training | No. of Students | Amount of Request | Amount Awarded | Comments |
|---------------|---------|--------------------------|---------------------|-----------------|-------------------|----------------|------------------------------|
| New York | NE | Newsletter | | | \$500 | 0 | Scholarship awarded to NEWMA |
| New York | NE | Cost of Facility | 3/22 to 25 1999 | NY Association | \$500 | \$500 | |
| New York | NE | NY State Tech School | 8/2 to 6 1999 | NY Officials | \$500 | \$500 | |
| NEWMA | NE | Price Verification | 5/10 to 13 1999 | 50 | \$500 | \$500 | |
| NEWMA | NE | Newsletter | | | \$500 | \$500 | |
| Mass | NE | Cost of Facility | Spring 99 | 30 to 40 | \$500 | \$500 | |
| SWMA | S | Newsletter | | | \$500 | \$500 | |
| Tennessee | S | Vehicle Scale | Early 99 | 5 | \$500 | \$500 | |
| Louisiana | S | Retail Motor-Fuel | 11/98 or 3/99 | 42 | \$3200 | \$1000 | |
| Texas | S | Price Verification | Jan-99 | 10 | \$1100 | 0 | Class Cancelled |
| Arkansas | S | Retail Scales | 5/3 to 7 1999 | 21 | \$1500 | \$500 | |
| Kentucky | S | Vehicle Scales | March 99 | 6 | \$744 | \$500 | |
| CWMA | Central | Newsletter | | | \$500 | \$500 | |
| Michigan | Central | Technical | Fall/Winter 1998/99 | 13 | \$6950 | \$500 | |
| Missouri | Central | Milk Volume | Oct 98 | | \$697 | \$500 | |
| Idaho | Western | Intermediate Metrology | Oct 98 | 1 | \$1090 | 0 | Rejected |
| San Diego, CA | Western | Investigative Techniques | April 99 | 2 | \$1588 | \$500 | |
| | | | | Totals | \$21,369 | \$7500 | |

Report of the
National Type Evaluation Program Committee

Steven A. Malone, Chairman of the NTEP Committee
Administrator
Nebraska Weights and Measures Division

500 Introduction

The National Type Evaluation Program Committee submits its Report for the 84th National Conference on Weights and Measures. This document consists of the Interim Report presented in NCWM Publication 16 “Program and Committee Reports,” as amended in the Addendum Sheets issued during the Annual Meeting. The Committee considered communications received prior to and during the 84th Annual Meeting which are noted in this report. The Report contains items related to NTEP. These items were formerly included as a 102 series in conjunction with the report of the NCWM Board of Directors (BOD).

Reference Key Items Contained in the Report

Table A identifies all of the items contained in the report by Reference Key Number, Item Title, and Page Number. The item numbers are those assigned in the Interim Meeting Agenda. Voting items are indicated with a “V” after the item number. Items marked with an “I” after the reference key number are informational items. An item marked with a “W” means that item has been withdrawn.

Table A - Agenda Items

| Reference Key No. | | Title of Item | Page |
|----------------------|---|--|------|
| 501-1 | I | U.S. - Canada Mutual Recognition of Type Evaluation Program Report | 3 |
| 501-2 | I | OIML Certificate Project | 3 |
| 501-3 | I | Test Data Exchange Agreements | 4 |
| 501-4 | I | Adoption of Uniform Regulation for National Type Evaluation by the States | 5 |
| 501-5 | I | NTEP Policy: Challenges to a Certificate of Conformance and Verification that Production Meets Type .. | 5 |
| 501-6 | I | NTEP Participating Laboratories and Evaluations Report | 6 |
| 501-7 | I | NTETC Sector Reports | 6 |
| 501-8 | I | Establishing an Internet Version of the Index of NTEP Certificates of Conformance | 8 |
| 501-9 | V | Additions and Revisions to the Definitions for Grain Moisture Meters in NCWM Publication 14 | 9 |
| 501-10 | V | Eliminating Provision for Pre-NTEP Certificates of Conformance | 11 |
| 501-11 | I | NTEP Policy: Changes to the Definition of an “Inactive” Certificate of Conformance | 12 |
| 501-12A | I | Canceling a Private Label Agreement | 13 |
| 501-12B | I | Identifying a Private Label Certificate of Conformance | 14 |
| 501-13 | V | Expansion of Pre-NTEP Certificates of Conformance | 15 |

Table B - Appendices

| Appendix | Title | Reference Key No. | Page |
|----------|--|-------------------|------|
| A | Report on International Work Group Meeting, TC3, “Metrological Control” | 501-3..... | 17 |
| B | SMA Map of Adoption of Uniform National Type Evaluation Regulation & Voluntary Registration Regulation | 501-4..... | 19 |
| C | Proposed Changes to NCWM Publication 14 to Address the Issue of Production Meeting Type and Challenges to a Certificate of Conformance – Original Proposal | 501-5..... | 20 |
| D | Proposal to Address the Issue of Production Meeting Type and Challenges to a Certificate of Conformance – Alternative Proposal | 501-5..... | 22 |
| E | NTEP Business Plan Work Group July 1999 Report | 501-5..... | 24 |
| F | Participating NTEP Laboratories Report | 501-6..... | 32 |
| G | Reduction of Certificate of Conformance Backlog at NIST | 501-6..... | 34 |
| H | NTETC Belt-Conveyor Scales Sector, October 5, 1998 Meeting Summary | 501-7..... | 35 |
| I | NTETC Measuring Sector September 18-19, 1998 Meeting Summary | 501-7..... | 45 |
| J | NTETC Weighing Sector October 6-7, 1998 Meeting Summary | 501-7..... | 62 |

**Table C
Voting Results**

| Reference Key No. | House of State Representatives | | House of Delegates | | Results |
|--|-----------------------------------|---------|--------------------|---------|---------|
| | Yes | No | Yes | No | |
| 501-9 | 36 | 0 | 51 | 0 | Passed |
| 501-10 | 36 | 0 | 52 | 0 | Passed |
| 501-13 | 38 | 0 | 48 | 0 | Passed |
| 500 (Report in its Entirety) Voice Vote | All Ayes | No Nays | All Ayes | No Nays | Passed |

Details of All Items

501-1 I U.S. - Canada Mutual Recognition of Type Evaluation Program Report

Source: Carryover Item 102-1 of the Report of the Executive Committee & NTEP Committee of the 83rd NCWM, 1998.

Background/Discussion: At the 1999 Interim Meeting, Tina Butcher, NIST Office of Weights and Measures (NIST-OWM), updated the Committee on the progress of work with Canada since the Committee's last meeting. The mutual recognition program with Canada on weighing devices continues to operate successfully. No changes have occurred in this area of the program.

Progress has been made in establishing a program for liquid-measuring devices. In August 1998, Will Wothlie, MD NTEP Laboratory, and Dick Suiter, NIST-OWM, participated in a joint evaluation of a retail motor-fuel dispenser with Measurement Canada staff. Following the evaluation, Measurement Canada summarized differences in U.S. and Canadian requirements, and NTEP staff confirmed these areas. Based upon the joint evaluation, NTEP staff and Measurement Canada staff agreed to initiate a pilot program. Under the pilot program, a manufacturer can request for an evaluation to be conducted by Measurement Canada in accordance with NTEP requirements; this testing may be performed in conjunction with testing to Canadian requirements. NTEP will accept the resulting data from Measurement Canada as a basis for issuing an NTEP Certificate for the device. Measurement Canada asked that, at least initially, the scope of the program be limited to retail motor-fuel dispensers. This initial limitation will facilitate implementation of the program and enable Measurement Canada to confirm whether or not the program fits within the strategic direction of their organization. Mrs. Butcher noted that this program will not be a mutual recognition program as in the weighing area, but will instead result in the recognition of data collected by Measurement Canada as the basis for issuing an NTEP Certificate.

Mrs. Butcher reported that NIST-OWM is preparing a communication package announcing the pilot program and detailing the conditions under which the program will operate. NTEP will distribute this material to all holders of NTEP Certificates of Conformance and interested parties.

1999 Annual Meeting Action: Tina Butcher, NIST-OWM, and Mr. Gilles Vinet, Measurement Canada, reported that further work on the pilot program for liquid-measuring devices has been put on hold pending discussions between NCWM and NIST to reorganize the NTEP program. The program for weighing devices continues to operate as it has in the past.

501-2 I OIML Certificate Project

Source: Carryover Item 102-2 of the Report of the Executive Committee & NTEP Committee of the 83rd NCWM, 1998.

Background/Discussion: At the 1999 Annual Meeting, Tina Butcher, NIST-OWM, gave the following update to the Committee on NTEP activities related to NTEP issuing OIML Certificates. The Office of Weights and Measures appreciates the assistance provided by Dr. Sam Chappell's office in these activities.

OIML R60, Load Cells: Since announcing R60 test capability in April 1997, NTEP received two applications for R60 testing. NTEP recently completed testing on these load cells and is pleased to announce the issuance of the first two U.S. OIML Certificates. The first OIML Certificate was issued to Mettler-Toledo, Inc. prior to the 1999 Interim Meeting and the second to Revere Transducers, Inc. shortly thereafter. Since the Interim Meeting, additional R60 testing was completed and a third R60 Certificate was issued to expand the capacities listed on one of the two original R60 Certificates.

OIML R76, Non-Automatic Weighing Instruments: NTEP announced R76 test capability in July 1998. Shortly prior to the 1999 Interim Meeting, NTEP received its first application for an R76 test. Since the Interim Meeting, an additional application was received and testing has commenced on at least one of the devices. No R76 Certificates have been issued to date.

The two R76 NTEP laboratories are reviewing a trial software package for recording and processing R76 test reports and are awaiting receipt of a revised version of the same package for review. A decision to purchase a software package for the two laboratories will be made based on feedback from the laboratories.

501-3 I Test Data Exchange Agreements

Source: Carryover Item 102-3 of the Report of the Executive Committee & NTEP Committee of the 83rd NCWM, 1998.

NTEP Committee

Background/Discussion: At the 1999 Interim Meeting, Dr. Sam Chappell, Chief, NIST Technical Standards Activities (TSA) Program, updated the Committee on progress in establishing a test data exchange agreement with other countries. Dr. Chappell noted that this work was initiated at the request of the NCWM which asked NIST to coordinate a meeting with representatives of other OIML countries that routinely issue OIML Certificates.

A meeting attended by representatives of the NCWM, NIST-OWM, NIST-TSA, and other OIML countries was held at NIST in April 1998. An initial draft of an agreement was developed at that meeting, and, although participants were not able to agree to accept the agreement as written, they felt it was a good start toward establishing an agreement. The major area of disagreement was in the scope of the agreement. Some participants wanted the agreement to establish the provision for “one-stop testing” in which any country can perform *all* tests required by another country’s requirements. Other participants, including the NCWM representatives, felt that the agreement should begin with a limited approach of recognizing OIML test data and be expanded as mutual confidence for operating the agreement is established among the laboratories. The U.S. representatives noted the successful approach taken with US/Canada mutual recognition work. The US/Canada program began with simple devices and expanded to include more complex devices and a broader scope of activities as confidence in the program and in the participants was established. Meeting participants also acknowledged the need to establish confidence in each other’s laboratories and to establish criteria that might be used to assess the relative capabilities of a laboratory in a specific testing area.

Dr. Chappell reported that the members of OIML are quite interested to establish an agreement quickly. He provided a schedule of activities to an OIML work group to encourage progress of the work. Dr. Chappell has invited his counterparts to discuss the draft mutual agreement in conjunction with a Presidential Council meeting in late February. The latest proposal does include the concept of one-stop testing and would also include the criteria for laboratory accreditation.

Dr. Chappell noted that the work group may call another meeting at NIST in May or June, and he also noted that the work group has a target date of having a framework agreement that would be endorsed by CIML at its meeting in October 1999. Under the current proposed framework, at least three member countries must sign up in any one of a number of testing categories. The participants may be different for different categories of devices. Hopefully, the NCWM will select agreements in which they feel comfortable participating.

Members of the NTEP Committee noted that, particularly with the recent issuance of the first U.S. OIML Certificates, they are interested in seeing whether or not other countries accept the U.S. Certificates before the Committee takes a position on mutually accepting other countries’ test results. The Committee noted a general willingness under such an agreement to accept another country’s OIML CC as a basis of issuing an NTEP CC, but to reserve the right to do additional testing if NTEP felt it was necessary.

1999 Annual Meeting Action: Dr. Sam Chappell, NIST-TSA, updated the Committee on progress in this area since the Interim Meeting. Dr. Chappell reported that a Work Group Meeting was held in Paris during the first week of June to discuss the proposed test data exchange agreement. The meeting was attended by approximately 40 people representing seventeen different countries. In addition to Dr. Chappell, U.S. representatives at the meeting included Ms. Barbara Bloch, Director, California Division of Measurement Standards, representing NCWM; Mr. John Elengo, NIST Technical Consultant; Mr. Darrell Flocken, Mettler-Toledo; and Mr. Gary Lameris, Hobart Corporation. Ms. Bloch provided the NTEP Committee with a report of that meeting; a copy of her report is found in Appendix A. Dr. Chappell noted that the initial scope of the agreement is limited to a particular category of instruments and, while this does not represent a big community of participants, it is a global community.

During the discussion of this issue, Committee members noted that some international work group participants have expressed an interest in conducting NTEP testing (in addition to testing to OIML recommendations and their own country requirements) on devices submitted to their laboratories. Such an approach would provide the convenience of “one-stop testing” to manufacturers who could have their devices tested to multiple countries’ requirements in one location. The Committee noted that NTEP currently accepts results of NTEP tests conducted by Measurement Canada; however, the process of establishing the agreement with Canada was somewhat different than the process proposed for establishing the test data exchange agreement. The establishment of the US-Canada agreement included mutual training of each country’s laboratory personnel and also included the development of joint worksheets and application forms. The Committee noted that this process provided a high degree of confidence in each country’s testing capability; however, the approach required a great deal of resources to implement and maintain. Since such a level of resources is not presently available to work with multiple countries on future international agreements, the Committee recognizes that different approaches must be considered. The Committee is interested in hearing from NCWM members whether or not their jurisdictions would be willing to accept NTEP test data from other

countries.

501-4 I Adoption of Uniform Regulation for National Type Evaluation by the States

Source: NTEP Committee – Status Report

Background/Discussion: Daryl Tonini, Scale Manufacturers Association (SMA), updated the NTEP Committee at both the Interim and Annual meetings on the status of SMA's drive to assist States to adopt the Uniform Regulation for National Type Evaluation (URNTE) and the Uniform Regulation for the Voluntary Registration of Servicepersons and Service Agencies (VRR). An updated map depicting the adoption of the NTEP and the Voluntary Registration Regulations is included in Appendix B. Mr. Tonini reported that Vermont continues to work toward adoption, and Kentucky's Attorney General's office plans to proceed with adoption of NTEP. Texas reports that, while they do not presently intend to formally adopt NTEP, they ask for NTEP Certificates of Conformance when there are questions concerning compliance of a device with Handbook 44. Gary West, New Mexico, reported to the Committee that New Mexico is in the process of adopting an NTEP regulation and asked for comments on a draft regulation from various members of the weights and measures community.

SMA continues to host NTEP breakfasts for State Directors at the regional weights and measures association meetings. SMA polled the NTEP laboratories for suggestions on questions to be discussed at future breakfasts. Discussions at these breakfasts have greatly assisted States in implementing NTEP and in identifying differences in implementation among the States. SMA is compiling the questions discussed at past breakfast meetings and will provide the summary to the NCWM. The summary should prove useful in assisting States to eliminate, to the extent practical, differences in their implementation of NTEP.

Mr. Tonini reported that States with some form of a registered service agency program seem to have the strongest programs. These States use the registered service agency requirements as a means to require training of service personnel, thus strengthening and improving the general compliance of devices with Handbook 44. Lou Straub, Maryland, reported to the Committee at the 1999 Interim Meeting that Maryland prepared draft material to establish a registration program and received support from Maryland's Department of Agriculture. Mr. Straub recognized the importance of extending training beyond the weights and measures staff to the service personnel.

501-5 I NTEP Policy: Challenges to a Certificate of Conformance and Verification that Production Meets Type

Source: Carryover Item 102-6 of the Report of the Executive Committee & NTEP Committee of the 83rd NCWM, 1998.

Background/Discussion: In 1998, the NTEP Business Plan Work Group drafted procedures to: 1) address the issue of assuring that weighing and measuring devices produced for the marketplace are the same as the model or type of the device that was approved by NTEP; and 2) resolve challenges to NTEP Certificates of Conformance. The procedures were intended to ultimately become part of National Conference on Weights and Measures (NCWM) Publication 14, NTEP Administrative Procedures, Technical Policy, Checklists, and Test Procedures.

The draft procedures (see Appendix C) were published for comment in NCWM Publication 16, Program and Committee Reports for the 83rd Annual Meeting. Based on the comments it received, the Work Group felt that there was a lack of strong support for the original proposal with regard to verification that production meets type. Consequently, the Work Group began considering an alternative proposal (see Appendix D) that involves receiving feedback from the States at the initial verification stage in the U.S. legal metrology system. The Work Group decided to collect industry comments on the approach to take to help ensure that production meets type. The Scale Manufacturers Association, the Gas Pump Manufacturers Association, and the Meter Manufacturers Association were asked to take the original proposal and the new proposal back to their respective organizations and develop input for consideration by the Work Group by December 1, 1998. The production meets type issue was also added to the agendas of the fall 1998 meetings of the NTETC Weighing and Measuring Sectors.

At the 1999 Interim Meeting, Barbara Bloch, NTEP Business Plan Work Group Chairman, reported to the NTEP Committee on the progress of the Work Group. Ms. Bloch reported that the last formal meeting of the Work Group was May 1998. The Work Group received comments from SMA, GPMA, MMA, and others on the "alternative proposal" described above (see Appendix D). The Work Group agreed to review these comments at its next meeting February 3-4, 1999. Ms. Bloch encouraged members of the NTEP Committee and other interested parties to attend the Work Group's meeting. Following that meeting, the Work Group expects to have recommendations on the business plan as well as on the issue of production meeting type. The Work Group will update the NTEP Committee on its progress at the NCWM July 1999 Annual Meeting.

NTEP Committee

1999 Annual Meeting Action: The Committee heard a report from Barbara Bloch of the progress of the NTEP Business Plan Work Group. A copy of the Work Group's July 1999 report to the NTEP Committee is included in Appendix E. Ms. Bloch distributed notebooks including the July 1999 report, a detailed progress report, and other related materials to the Committee. A few additional copies of these notebooks are available upon request from NIST-OWM.

The NTEP Committee again acknowledged the contributions of the Work Group and expressed appreciation of its continued efforts.

501-6 I NTEP Participating Laboratories and Evaluations Report

Source: NTEP Committee – Status Report

1999 Interim Meeting Action: Lynn Sebring, NIST-OWM, presented a report of laboratory activities to the NTEP Committee at the NCWM Interim Meeting. Ms. Sebring noted that the **new NTEP database has given NTEP additional flexibility in the management and review of NTEP process data. Taking advantage of this flexibility, NTEP has revised the queries used to generate the Participating Laboratory Reports to better reflect *all* NTEP activities. To enable comparison with past years' activities, the values for past years have been recalculated to the extent possible; consequently, some data points may not be comparable to data provided to the Committee in past reports.**

The Committee reviewed the data presented and asked about efforts to reduce the turnaround time for Certificate processing.

Ms. Sebring noted that NTEP experienced some delays in the Certificate processing step due to changes in contracting staff; however, recent reports indicate that this problem has been addressed. NIST hired a temporary part-time employee to eliminate a large backlog of Certificates (which required no testing) to be drafted within OWM. NTEP also received assistance from the Maryland NTEP laboratory which accepted assignments for some of these Certificates. As a result, the previous backlog has been significantly reduced, and NTEP expects it to be eliminated in the near future.

1999 Annual Meeting Action: Tina Butcher, Technical Advisor, presented a report of laboratory activities prepared by Lynn Sebring, NIST-OWM. This report, which is found in Appendix F, includes the information presented to the Committee at the 1999 Interim Meeting as well as updated information since that time. Mrs. Butcher also presented a report (see Appendix G) detailing the reduction of backlogged Certificates since October 1998 and noted that the Certificate backlog at NIST-OWM has been essentially eliminated. The Committee had no discussion or comment on this item.

501-7 I NTETC Sector Reports

Source: NTEP Committee – Status Report

Background/Discussion: At the 1999 Interim Meeting, the Committee heard the following reports from the technical advisors to the NTETC Sectors. No additional activity occurred in this area between the 1999 Interim and Annual Meetings.

Belt-Conveyor Scales Sector. Thomas Ahrens, NIST-OWM, updated the NTEP Committee on the recent activities of the Belt-Conveyor Sector. The Sector met on October 5, 1998, in Sacramento, CA, in conjunction with the Weighing Sector and NTEP Weighing Laboratory Meetings. A summary of meeting decisions was distributed to Sector members shortly after the meeting, and a final meeting summary was distributed to Sector members in early January. A copy of the final meeting summary is included in Appendix H. The group discussed significant issues including the revision to load cell substitution criteria for belt scales to be more consistent with other weighing devices and the continued development of an Examination Procedure Outline (EPO) to improve uniformity in testing of belt-conveyor scales.

The next Sector meeting is scheduled for October 4-5, 1999 in conjunction with the Weighing Sector and NTEP Weighing Laboratory Meetings in Ottawa, Ontario, Canada.

Grain Moisture Meter (GMM) and Near Infrared (NIR) Protein Analyzer Sectors. Diane Lee, NIST-OWM, updated the NTEP Committee on the recent activities of the Sectors. Ms. Lee noted that, depending on the nature and number of items available for the agenda, the Grain and Protein Sectors typically meet in September and March of each year. The Chairman and technical advisors of the Sector concurred that there were insufficient agenda items to warrant meetings in either September 1998 or March 1999; consequently, the Sectors have not met since March 1998. The decision on whether or not to hold a September 1999 meeting will be made by the Chairman and Technical Advisors later in spring 1999.

Ms. Lee reported that, at its March 1998 meeting, the Grain and Protein Sectors: (1) assigned a working group to develop EPOs and test procedures for the field evaluation of GMM and NIR devices; (2) addressed the need for further study of the NIST Handbook 44 NIR Tentative Code before its final adoption; and (3) discussed the proposed NIST HB44 criteria for test weight per bushel. Ms. Lee updated the Committee on the current status of these activities as follows:

1. *Working Group to Develop EPOs and Test Procedures for the Field Evaluation of GMM and NIR Devices.* Initial drafts of the GMM and NIR EPOs have been developed and are being prepared for circulation and review by the sector members. The final drafts will be reviewed at the Sector's next meeting.

2. *NIST Handbook 44, NIR Tentative Code Study.* Six States (Arkansas, Iowa, Illinois, Missouri, Nebraska and North Carolina) are participating in a study of the NIST Handbook 44 NIR Tentative Code. The objectives of the study are:

- × # to obtain information on whether or not code modifications are needed before recommending that it be upgraded to permanent code;
- × # to gain information on proposed modifications to the Code to include corn (protein, oil and starch), barley (protein), and soybeans (protein and oil);
- × # to gain information on the current status of commercial NIR devices; and
- × # to gain information on the mechanism for establishing State NIR inspection programs.

Results of the study should be available by August 1999 and the Sector will review them at its next meeting.

3. *NIST Handbook 44 Criteria for Test Weight per Bushel.* Proposed test weight per bushel criteria was discussed at the March 1998 meeting, and the sector was balloted on a specific proposal in August 1998. While many sector members agreed with the need for criteria, some sector members were not in agreement with the tolerances as proposed. The Sector will revisit the test weight per bushel tolerances at its next meeting.

Ms. Lee also updated the NTEP Committee on activities within NIST and Grain Inspection Packers and Stockyards Administration (GIPSA) to procure continued funding of the NTEP Ongoing Calibration Program. Both NIST and GIPSA are amenable to continued support of the program, although the levels of their contributions will be reduced compared with the previous agreement. The funding, expected to be in place by late spring, will be procured through either an interagency agreement or another type of agreement between the two agencies. This information, including the proposed reduction in government funding, was shared with manufacturers at the Sector's 1998 meeting and those present accepted it.

Measuring Sector. Thomas Ahrens, NIST-OWM, updated the NTEP Committee on the recent activities of the Sector. The Sector met September 18-19, 1998 in Albuquerque, NM, in conjunction with the Western Weights and Measures Association. The NTEP Measuring Laboratories also met the day prior to the Sector meeting. A summary of decisions was distributed to Sector members several days following the meeting, and a final meeting summary was distributed in January 1999. A copy of the final summary is included in Appendix I. Mr. Ahrens expressed appreciation to the Western Weights and Measures Association for assisting in coordinating the meeting arrangements.

Significant issues discussed at the Sector's last meeting include the need to review and revise the liquid-measuring device checklists to eliminate inconsistencies, particularly in the area of mass flow meters. Mr. Ahrens reported that NTEP is revising all mass flow meter Certificates of Conformance (CCs) issued to date to eliminate inconsistencies among CCs which were issued prior to establishing clear NTEP criteria. The Sector is continuing work on a checklist for cryogenic devices. The Sector is also continuing work on an examination procedure outline for compressed natural gas dispensers to improve the consistency in CNG devices and inspection methods.

A question was raised concerning a work group established to review and revise mass flow meter checklist criteria and the apparent lack of NTEP laboratory representation on the work group. Mr. Ahrens advised the Committee that members of the laboratories were asked to participate, but declined based upon their heavy workload. He noted, however, that the laboratories agreed to review final drafts and that the Sector must review and accept final proposals from the group.

The Sector anticipates holding its next meeting in Olympia, WA, in September 1999, in conjunction with the Western Weights and Measures Association's annual meeting.

Weighing Sector. Dick Suiter, NIST-OWM, updated the Committee on the recent activities of the Weighing Sector. The Sector met October 6-7, 1998 in Sacramento, CA in conjunction with the Belt-Conveyor Scales Sector and the NTEP Weighing Laboratory Meetings. A summary of meeting decisions was distributed to Sector members shortly after the meeting, and a final meeting summary was distributed prior to the Interim Meeting. A copy of the final meeting summary is included in Appendix J.

NTEP Committee

Members of the NTEP Committee and NIST-OWM acknowledged the need for more training to assist laboratory personnel in keeping current with changes in technology. Additional training sessions and activities, such as intercomparison tests to improve uniformity in type evaluations, would be beneficial.

Mr. Suiter noted that the next general NTEP laboratory training sessions and lab meeting are scheduled for **May 17-20, 1999 in Ottawa, Ontario, Canada. An NTEP Weighing Laboratory meeting will be held in conjunction with the next Weighing Sector meeting, which is scheduled for October 4-7, 1999. The Sector meeting will also be held in Ottawa. The Sector has attempted to rotate its meeting locations among the main NTEP Weighing Laboratory locations to facilitate laboratory attendance and minimize participation costs. The Sector has rotated among all the major type evaluation laboratories except Canada.**

501-8 I Establishing an Internet Version of the Index of NTEP Certificates of Conformance

Source: NTEP Committee – Status Report

Background/Discussion: Since January 1998, NIST-OWM has been posting newly issued NTEP Certificates of Conformance (CCs) on the NTEP Internet Home Page. At the July 1998 Interim Meeting, the NCWM decided to discontinue publishing NCWM Publication 5 because all newly-issued CCs are available through the Internet. The NCWM also agreed to allocate funding to support the establishment of an electronic version of NCWM Publication 5 which includes all NTEP CCs. NIST-OWM plans to continue issuing an index of device evaluations which includes listings by company name, device type, and CC number, but does not include the CCs. NIST-OWM continues to distribute hard copies of the CCs to those States and local jurisdictions who have requested copies.

At the 1999 Interim Meeting, Thomas Ahrens, NIST-OWM, reported to the NTEP Committee that he is working closely with Terry Grimes, NIST-OWM, and other members of the NIST-OWM staff to establish an Internet version of NCWM Publication 5, National Type Evaluation Program Index of Device Evaluations. Mr. Ahrens reported that NIST-OWM hired a local contractor using NIST funds to analyze the system requirements and propose possible approaches to provide this service. Two customer focus groups including weights and measures officials and industry representatives will be held in conjunction with the Interim Meeting. Using the information obtained from the contractor and the feedback from the customer focus groups, NTEP will select a final approach and prepare an request for proposal for NCWM Board of Directors (BOD) and NTEP Committee review. Mr. Ahrens distributed a proposed timeline for completing this project and noted that the target date for the beta version of the system is July 1999. In addition to developing the structure of the system, older CCs must be converted to and in some cases re-entered in a compatible format.

Mr. Ahrens reported that NIST-OWM has received many positive comments from people who have accessed the CCs presently on the NTEP home page. He noted that the current system is not in the format envisioned for the final project; however, people seem pleased to have access to this information. Mr. Ahrens expressed appreciation for the many comments and suggestions received thus far, and he encouraged people to comment further on the proposed system. NIST-OWM also reported that some people are concerned that not all weights and measures officials have access to the Internet.

1999 Annual Meeting Action: The Committee heard a report from Mr. Ahrens, NIST-OWM, on the progress of the Certificates on the Internet Project. Mr. Ahrens reported that he and other NIST-OWM staff have spent considerable time working over the past few months with an external contractor hired to complete the project. Thanks to this work and NCWM, Inc. funding allocated by NCWM Chairman Aves Thompson for the contractor, all current NTEP Certificates have been converted and are now available through the NIST NTEP home page at <http://www.nist.gov/ntep>. Mr. Ahrens provided a demonstration of the system to interested parties during the week of the Annual Meeting and received many favorable comments on the ease of access and speed of the system.

501-9 V Additions and Revisions to the Definitions for Grain Moisture Meters in NCWM Publication 14

(This item was adopted.)

Source: Carryover Item 102-10 of the Report of the Executive Committee & NTEP Committee of the 83rd NCWM, 1998, National Type Evaluation Technical Committee Grain Moisture Meter Sector

Recommendation: Make the following changes to NCWM Publication 14, Section 1, Administrative Policy and Procedures, Part N (proposed additions are underlined):

N. Status of Certificate of Conformance, Maintenance Fee

Except for Grain Moisture Meters, a Certificate of Conformance does not have an expiration date; however, the device manufacturer must update the design of a device to meet new or modified requirements adopted by the NCWM. The NCWM charges a maintenance fee for Active Certificates to support the technical and administrative activities of the NCWM for NTEP.

1. Declaration of Status by Certificate Holder

The Certificate holder, usually the manufacturer or remanufacturer, declares intent to continue to manufacture or remanufacture the device by paying to the NCWM an annual maintenance fee for the Certificate. If the maintenance fee is not paid (or if other outstanding bills have not been paid or arranged to be paid for the issuance of a Certificate), the Certificate is Inactive.

In addition to the above, Grain Moisture Meter manufacturers must pay an annual participation fee for the NTEP Laboratory Ongoing Calibration Program, OCP (Phase II) in order to maintain their certificate in an Active status.

2. Active Status

Devices are being manufactured or remanufactured for commercial applications under an NTEP Certificate of Conformance. This means that the Certificate is in force with a hard copy of the Certificate issued and distributed.

In addition to the above, a Grain Moisture Meter must remain in the OCP (Phase II) and the manufacturer must continue to pay the required maintenance fee. Grain Moisture Meter Certificates may also be assigned an Active status if: (1) the original device is no longer manufactured or remanufactured, but the device continues to participate in the OCP(phase II); or (2) a third party elects to maintain the calibrations after a Certificate expires for a device in which the original manufacturer has stopped manufacturing or remanufacturing the device. (Also see "Note" under Section 6, Expired Status.) In order to participate in the ongoing calibration program the certificate must remain Active.

3. Effective Status

This is equivalent to Active status, but a hard copy of the Certificate of Conformance has not yet been issued and distributed. Therefore, a hard copy of the Certificate is not yet included in Publication 5.

4. Inactive Status

An Inactive Certificate of Conformance is a Certificate which was previously Active, but the devices are no longer being manufactured or remanufactured for commercial applications. However, devices that are already manufactured, installed, or in inventory, but not yet sold, may be used, sold, repaired, and resold under an Inactive Certificate of Conformance.

5. Withdrawn Status

The Certificate of Conformance remains valid unless it is withdrawn as a result of a specific NTEP determination.

A Certificate of Conformance may be withdrawn:

- a. for deficiencies in the type, or
- b. when production devices do not meet type.

Additionally, a Grain Moisture Meter Certificate may be withdrawn when, for 2 consecutive years, problems or deficiencies occurring in the OCP (Phase II) have prevented the issuance of valid calibration constants for all calibrations previously classified as "Approved" or "Pending." After a Certificate is withdrawn, the manufacturer must submit a new application and application fee per device model, and the device must be reevaluated in Phase I before it is entered in the OCP (Phase II). Any meters manufactured after a Certificate is withdrawn, cannot be sold or placed into service for commercial use. Meters in service will be subject to individual State enforcement activities.

NTEP Committee

6. Expired Status

An Expired status is assigned to a Grain Moisture Meter Certificate of Conformance when a manufacturer elects to discontinue participation in the Ongoing Calibration Program and the calibrations listed on the CC were performing acceptably at the time the manufacturer stopped participating in the OCP (Phase II).

Any grain moisture meters manufactured after a Certificate has expired cannot be sold or placed into service for commercial use. Meters in service may be used, but actions taken will depend on individual State enforcement activities. (See Note.)

Note: A third party is allowed to assume responsibility for maintaining calibrations for a grain moisture meter whose has expired without re-entering Phase I if the party participates in the OCP (Phase II) testing the year the original certificate expires and providing the original manufacturer certifies that the device will no longer be manufactured or remanufactured. In this case, the third party must (1) submit evidence of authorization from the original manufacturer for use of previous test results and also certification from the original manufacturer that the device will no longer be manufactured or remanufactured, (2) submit a new application, (3) pay the participation fee for the device, (4) demonstrate the ability to re-predict moisture data and modify calibrations as required (5) pay the maintenance fee for the new certificate, and (6) permanently mark the device with the company name. After successful completion in the OCP, an Active Certificate with a new number would be issued for the device submitted by the third party.

Justification: Unlike Certificates of Conformance (CCs) for other NTEP devices, CCs for grain moisture meters automatically expire July 1. To maintain Active status, meters must remain in the NTEP Ongoing Calibration Program and the CCs must be re-issued annually with valid calibration constants. The unique treatment of CCs for grain moisture meters requires modification of a portion of the Administrative Procedures of Publication 14.

Background/Discussion: At the 1998 Annual Meeting, Diane Lee of NIST-OWM reported that the Grain Moisture Meter Sector, at its March 1998 meeting, made several changes to its original proposal. Because of the extent of the changes and because of due process concerns, the NTEP Committee decided to change this item from a voting item to an informational item at that time. It was agreed that the revised proposal would be published for comment in the agenda for the 1999 Interim Meeting.

At the 1999 Interim Meeting, Ms. Lee reviewed the issue with the Committee. Ms. Lee proposed minor changes to the proposal under "Section 2. Active Status." The Committee accepted these changes and included them in the recommendation above.

The Committee received few comments on this item during the 1999 Interim Meeting open hearings; however, some comments were made concerning the definition of remanufactured as used in the language presented. The Committee noted that the S&T Committee is addressing the issue of remanufactured equipment as a separate issue and noted that the recommended language is based on the current definition provided in NIST Handbook 130.

501-10 V Eliminating Provision for Pre-NTEP Certificates of Conformance

(This item was adopted.)

Source: Central Weights and Measures Association

Recommendation: Delete Subsections 4 and 5 under Section 1, Administrative Policy and Procedures, Part H, in NCWM Publication 14 as follows, and renumber Subsection 6, accordingly:

Section H. Variations in Type Evaluation

....

4. ~~Evaluation of a Type Previously Approved by Pre-NTEP Jurisdiction~~

A type already approved in one or more jurisdictions may be submitted for evaluation under NTEP.

Discussions with the approving jurisdiction(s) may lead to the conclusion that the type meets all requirements of NTEP, in which case a Certificate of Conformance may be issued without formal testing.

NTEP may accept data obtained in, or conclusions drawn from, prior evaluation.

NTEP may conclude that limited evaluation will suffice to check for differences in the requirements of the testing jurisdiction and NTEP.

Prior to an NTEP evaluation, OWM will examine the report of the previous evaluation and the regulations under which the prior evaluation was made and will determine the extent to which the results can be accepted. The decision may be based in part on the similarity of requirements in the two cases and on the policies and reputation for competence of the pre-NTEP jurisdiction.

5. ~~Recognition of Pre-NTEP Approved Devices~~

- a. ~~Pre-NTEP Certificates of Conformance will be issued to those devices that: (a) are not affected by the influence factors; (b) satisfy the NTEP requirements; and (c) are based upon the evaluation by another jurisdiction.~~*
- b. ~~Manufacturers of these devices must request that a Certificate of Conformance be issued and provide copies of the certificates of approval.~~*
- c. ~~If NTEP determines that adequate testing was performed and the device has not been modified from the original device design, then a pre-NTEP certificate will be issued.~~*
- d. ~~The pre-NTEP certificates will be distributed to the States. State Directors will be asked to report (within 90 days of receipt) if their experience indicates that the devices do not comply with Handbook 44. Any objections will be reviewed by the Board.~~*
- e. ~~If there are no unfavorable responses, a full Certificate of Conformance will be issued for the device within 120 days from the date the pre-NTEP certificate was distributed to the States.~~*

6. 4 Evaluation of a Type in Use but not Previously Approved

Many types in use have never undergone type evaluation....

Background/Discussion: Prior to the establishment of NTEP in 1984, approximately 17 different type approval programs operated at the State and local level in the United States. To sell a commercial weighing or measuring device under this structure, a manufacturer was required to submit a request for type approval in each of these jurisdictions. NTEP was designed to serve as a single program that would be accepted by all jurisdictions, thus reducing the burden on individual jurisdictions and reducing costs to the manufacturer.

When NTEP was established, the NCWM recognized that some manufacturers might have already completed some sort of type approval process in one of these jurisdictions. Thus, a policy was established which enabled NTEP to recognize these approvals as a basis for issuing pre-NTEP Certificates of Conformance (CCs). These pre-NTEP CCs were provisional for a period of 90 days during which time jurisdictions could provide input to NTEP concerning the compliance of the device with NIST Handbook 44. If no negative comments were received, the CC could be upgraded to a full NTEP CC. The pre-NTEP provision was designed to minimize costs to manufacturers who had recently gone through a jurisdiction's type approval process prior to the establishment of NTEP and to recognize device types that had been in use for many years in commercial applications.

NTEP has received and processed many requests for NTEP CCs under the pre-NTEP policy. Now that the majority of States require NTEP CCs, it is believed that manufacturers who were affected by the transition from pre-NTEP approval systems to NTEP have taken advantage of the provision in order to recognize model lines in commercial applications.

Since NTEP has been in operation for more than 14 years, manufacturers who are affected by the implementation of NTEP have had adequate opportunity to take advantage of the pre-NTEP provision. To ensure integrity in the NTEP process and to be fair to manufacturers who are required to submit new model lines for evaluation, it is proposed that the provision for obtaining NTEP CCs through the pre-NTEP process be eliminated. (Note that the proposed change would not affect pre-NTEP CCs which have already been upgraded from provisional pre-NTEP to full NTEP CCs.)

At the 1999 Interim Meeting, the Committee heard questions concerning how this proposal ties in with the proposal in Item

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501-13 Expansion of Pre-NTEP Certificates of Conformance. The Committee clarified that the proposed changes in Item 501-13 apply only to pre-NTEP Certificates of Conformance which have already been issued. The Committee received comments from GPMA, Rice Lake Weighing, and SMA supporting this item.

501-11 I NTEP Policy: Changes to the Definition of an "Inactive" Certificate of Conformance

Source: Central Weights and Measures Association

Recommendation: Revise NCWM Publication 14, Section 1, Administrative Policy and Procedures, Part N, Subsection 4, as follows:

N. Status of Certificate of Conformance, Maintenance Fee

.....

4. Inactive Status

An Inactive Certificate of Conformance is a Certificate which was previously a Active, but the devices are no longer being manufactured or remanufactured for commercial applications. However, ~~d~~Devices already manufactured, installed, or in inventory, but not yet sold, may be used, sold, repaired, and resold under an Inactive Certificate of Conformance already installed may be used, repaired, and resold under an Inactive Certificate of Conformance. Provided the manufacturer supplies NTEP with the serial number or date code of the last device of that model manufactured for commercial applications, new devices already manufactured or in inventory, but not yet sold may be sold under an Inactive Certificate of Conformance.

Justification: The amendment would provide weights and measures officials with the information needed to know what devices are covered by the Active Certificate of Conformance and the means to identify those devices that are manufactured after the Certificate becomes Inactive. If the manufacturer does not provide the serial number of the last manufactured device under the Active Certificate, the date on which the Certificate becomes Inactive becomes the sales deadline. Devices sold after this date would be non-NTEP devices.

Background/Discussion: At the 1999 Interim Meeting, the Committee heard comments that not all manufacturers use a serial number to track the manufacturing history of a device; instead, many use a date code which includes information relevant to the manufacture of a device. Similar comments were submitted by the technical Sectors of NTEP. The Committee agreed that the proposed language should be broadened to recognize other means that might be used by a manufacturer to identify the date of manufacture of its devices.

During the Committee's open hearings, people expressed concerns about how the proposal would impact equipment in a distributor's stock when the original manufacturer goes out of business. If the original manufacturer does not supply the last serial number or date code, this may result in a penalty to the distributor who would not be able to sell the equipment in stock. The Committee indicated that the intent of the proposal is not to penalize the distributor or the original equipment manufacturer, but to assist weights and measures officials who have difficulty determining whether or not a particular device is covered under an Inactive Certificate of Conformance. To address the concern over equipment in a distributor's stock, the Committee is considering incorporating into the proposed language a time frame that would provide adequate time for the sale and distribution of equipment in stock. The Committee discussed a possible time frame of 12 months; however, it would like to hear comments on what is considered a reasonable time frame. Some comments were also heard indicating that, in such situations, most weights and measures jurisdictions would work with a distributor to help resolve the situation rather than unduly penalize them.

The Committee also heard concerns over how the proposed criteria would apply to remanufactured equipment. The Committee noted that the S&T Committee is presently reviewing the issue of remanufactured equipment. The proposal presented by the NTEP Committee is simply intended to assist weights and measures officials apply the NTEP regulation in their jurisdictions; it is not intended to define when a particular device is considered to be repaired or remanufactured.

The Committee received written comments from George Anderson, DurEquip, and heard comments during its open hearings at the 1999 Interim Meeting indicating that the language in the original proposal needs clarification. After reviewing several proposed alternatives, the Committee agreed on the language as outlined in the recommendation above. Because of the many comments heard on this issue during the Interim Meeting, the Committee decided to retain this item as an informational item to

allow additional study of the item by affected parties. The Committee is also interested in hearing other alternatives which might provide the information needed by weights and measures officials to determine whether or not a device is covered by an Inactive Certificate of Conformance.

At the 1999 Annual Meeting, the Committee heard few additional comments on this item. The Committee encourages interested parties to study the proposed language and provide comments to the Committee.

501-12A I Canceling a Private Label Agreement

Source: NIST-OWM NTEP Management

Recommendation: Modify NCWM Publication 14, Section 1, Administrative Policy and Procedures, Part E, as follows:

E. Request for Type Evaluation

...

A company that is marketing a device (e.g., scale, indicator, or load cell) from a manufacturer and re-labeling it under its own name must submit a separate request for a Certificate of Conformance using the forms found in Appendix D. The forms include a statement that, except for the change in proprietary markings, the device is not changed from the original type. The original manufacturer must verify that:

- (1) the manufacturer is providing the device to the company;*
- (2) the re-labeling is authorized by them; and*
- (3) the device provided to the company is identical to the original type for which the manufacturer has received a Certificate of Conformance.*

If a company re-labels equivalent devices (e.g., load cells) from multiple suppliers, the company must:

- (1) satisfy the requirements above for each manufacturer; and*
- (2) assign a unique model designation to each type from each manufacturer. The same model series may be used, but unique prefixes or suffixes must be used.*

The private label agreement forms the basis for NTEP to determine metrological equivalence of a private labeled device with a device produced under a CC issued to an original equipment manufacturer (OEM). The OEM and the holder of a private label CC must notify NTEP of any change in status of the private label agreement as it relates to NTEP. Should either party cancel the private label agreement, the private label CC will be rendered INACTIVE as of the date of the cancellation of the private label agreement. If the OEM CC becomes INACTIVE, then the private label CC will also become INACTIVE.

Background: Publication 14, Part E, of the NTEP Administrative Policy and Procedures allows a company to apply for an NTEP Certificate of Conformance (CC) under a private labeling agreement which is sometimes referred to as a "piggyback" Certificate. The company re-labeling the devices must apply for a CC in its own name. The original equipment manufacturer (OEM) must give permission for that company to use the results of the evaluation. The forms found in Appendix D of Publication 14 must be completed by the company requesting the CC and the OEM; these forms confirm that the devices provided to the private labeler are the same as the devices originally evaluated under the OEM's CC. The forms also confirm that the company private labeling the devices does not modify the devices in any way other than marking the device with their own proprietary information. This documentation helps to ensure that the devices being private labeled are metrologically equivalent to the devices evaluated under the original CC.

NTEP policy does not specify how a private label CC is affected if one or the other party cancels the private label agreement. NTEP is not concerned with the business details of the agreement; however, there is concern that canceling the agreement also cancels the terms of the agreement that relate to the metrological equivalence of the private-labeled devices. Although the metrological equivalence of devices already produced and sold was guaranteed through the original agreement, the metrological equivalence of devices produced after the cancellation of the agreement has not been guaranteed. Consequently,

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it is proposed that a private label CC be changed to an INACTIVE status when one or the other party cancel the private label agreement. Note that an inactive status does not affect devices already in service.

During discussions of this issue at the 1999 Interim Meeting, questions were raised concerning how a private label CC will be affected if the OEM makes its parent CC Inactive. The Committee agreed to modify the proposed language to indicate that the private label CC will become Inactive if the parent CC becomes Inactive. A particular concern expressed was how the devices in the private labeler's stock will be affected. The Committee noted that, as proposed in Item 501-11, the OEM and the private labeler must provide the last serial number or date code to NTEP. Any devices in either the OEM's or the private labeler's stock would continue to be covered by the Inactive CC as long as this required information is provided to NTEP.

1999 Annual Meeting Action: This item was originally presented as a voting item on the Committee's agenda. The Committee heard comments on this item indicating that changes may be needed to the proposed language to better reflect the scenarios under which changes to private label agreements might affect the status of related Certificates of Conformance. To allow the opportunity for additional comments and development of the language, the Committee decided to change this item to an informational status.

501-12B I Identifying a Private Label Certificate of Conformance

(This item was added to the Committee's agenda during the 1999 Interim Meeting as a result of discussions in conjunction with Item 501-12A. The Committee decided to expand Item 501-12 into two parts to facilitate discussion of the two related issues.)

Source: NTEP Committee

Recommendation: Add the following text to Publication 14 Section E. Request for Type Evaluation:

When a new Certificate of Conformance (CC) is created for a company under a private label agreement, the new CC must reference the original manufacturer's name and CC number.

Background/Discussion: During its discussion of Item 501-12A at the 1999 Interim Meeting, the Committee heard comments indicating that field officials and NTEP administration are experiencing difficulty identifying NTEP Certificates of Conformance which have been issued as a result of private label agreements. NIST-OWM reported that there are also instances where the company that is private labeling a device has difficulty keeping track of the original equipment manufacturer (OEM) that supplied the device covered by their Certificate of Conformance. This occurs particularly when the manufacturer holds multiple CCs for similar device types such as load cells. OWM also reported finding OIML Certificates which reference privately labeled load cells with the OEM's name. Facilitating the identification of the OEM (or the OEM's CC) assists weights and measures officials and NTEP administration in resolving problems with non-compliant devices and in maintaining private label CCs consistent with the parent CC.

Some manufacturers expressed concern over making the private label status of their CCs public knowledge. Some companies prefer that their customers do not know that another company manufactures the devices.

The Committee believes that identifying CCs issued under a private label agreement is necessary; however, it does not want to create undue hardship for either the private labeler or the original equipment manufacturer. Although the Committee recognizes and appreciates marketing concerns that may exist in such cases, the Committee believes that it is essential that the field officials be given the information needed to efficiently use the CC. The Committee also heard alternate suggestions to address the problem, such as: (1) including a statement that the CC is a private label CC, but not the parent CC number; (2) including a code in the CC number to indicate that the CC is a private label CC; and (3) providing a cross reference list of CC numbers and their parent CCs. Comments indicate that identifying the specific parent CC number may be preferable to those who support the proposed language.

The Committee is including this item on its agenda as an information item to enable further study of the item and to hear additional proposals that might assist the field official and NTEP Administration in addressing these concerns.

1999 Annual Meeting Action: The Committee heard additional comments from SMA and Rice Lake Weighing opposing the proposed language. Some comments indicated that a private label Certificate should mirror the original "parent" Certificate; however, it was noted that not all companies holding private label Certificates request the same range of sizes, capacities, and

other parameters as that requested by the original manufacturer. Weights and measures officials noted continued difficulty under the current system locating information involving private labeled devices. The Committee is interested in hearing additional comments on how these concerns might best be resolved.

501-13 V Expansion of Pre-NTEP Certificates of Conformance

(This item was adopted.)

Source: NTETC Weighing Sector

Recommendation: Add the following to NCWM Publication 14, Section 1, Administrative Policy and Procedures, Part H, Variations in Type Evaluation, Subsection 3. Expansion of the Certificate of Conformance:

Certificates of Conformance (CCs) issued as a result of type evaluation testing performed prior to the establishment of NTEP, that is Certificates that were originally issued as "pre-NTEP" CCs, may cover ranges of parameters within those included on the original pre-NTEP type approval certificates. The parameters covered must be within those allowed by the technical policy for the individual device type; parameters include elements such as device capacity, platform size, n_{max} , product type, etc. Pre-NTEP CCs cannot be expanded to cover parameters beyond those listed on the pre-NTEP type approval certificates without additional NTEP testing.

Background: NTEP Certificates of Conformance issued under the provision for pre-NTEP CC policy cover only those parameters (capacities, platform size, product type, etc.) listed on the original pre-NTEP type approval certificate. In the past, the NTEP Committee heard appeals from manufacturers who asked that their pre-NTEP CCs be expanded to cover ranges of parameters based on NTEP technical policy and without NTEP testing.

The NTEP Committee takes the position that the technical policies established to cover ranges of device parameters and families do not apply to pre-NTEP certificates. The pre-NTEP CC policy was established to provide some degree of relief to those manufacturers who expended resources to obtain type approvals prior to the establishment of NTEP; the policy was seen as a mechanism to ease the transition from multiple type approval programs to a single, nationally-based program, NTEP. NTEP technical policies are based upon the premise that type evaluation testing has been performed on a device according to stringent NTEP test protocols. Because little information is typically available about the type and amount of testing performed in a pre-NTEP type approval and there was no NTEP oversight on these pre-NTEP tests to ensure consistency with today's NTEP testing requirements, the Committee sees no reason to extend these policies to pre-NTEP type approvals. Consequently, the NTEP Committee takes a position that pre-NTEP CCs cannot be expanded without additional NTEP testing.

At its October 1998 meeting, the NTETC Weighing Sector heard a proposal to revisit this issue. The Sector concurs with the NTEP Committee that pre-NTEP CCs should not be expanded *beyond* the parameters covered on the pre-NTEP type approvals. However, the Sector believes that there is technical merit to allow parameters *within* the limits covered on the pre-NTEP type approvals to be covered without additional NTEP testing. The Sector believes that, if the parameters listed on the CCs represent the upper and lower limits of size, capacity, etc., then devices with parameters falling within these limits should perform as well as or better than those already included on the CC. Consequently, the Sector asked that the NTEP Committee consider changes to Publication 14 that would recognize ranges of parameters within those listed in the pre-NTEP type approval.

The proposed criteria allow for a range of parameters to be covered based upon the device(s) originally included on the pre-NTEP type approval certificate(s). For example, if the pre-NTEP type approval of a vehicle scale included capacities of 90 000 lb, 100 000 lb, and 120 000 lb, the resulting NTEP CC can cover capacities ranging from 90 000 lb to 120 000 lb. The CC cannot be expanded to include capacities below 90 000 lb or above 120 000 lb without additional NTEP testing.

Similarly, if the platform lengths listed on the pre-NTEP type approval included 70-foot, 80-foot, and 90-foot lengths, the NTEP CC can cover lengths of 70 feet to 90 feet. The CC cannot be expanded to cover lengths below 70 feet or lengths above 90 feet without additional NTEP testing.

At the 1999 Interim Meeting, the Committee heard comments from industry indicating concern that the range of CLCs not be expanded beyond that covered by the original pre-NTEP Certificate and that the CLCs listed on the CC should be considered in conjunction with other device parameters. The Committee acknowledged that requirements and limitations for individual parameters such as span, capacity, and CLC would continue to be applied. The Committee also noted that NTEP CCs will

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continue to include terminology stating that individual parameters must meet applicable formulas in final installations. Based on comments it received, the Committee eliminated specific examples of how to apply the criteria from the proposed language for Publication 14 and agreed instead to include the example in the discussion section of its report.

S. Malone, Nebraska, NTEP Committee Chairman/Past NCWM Chairman

A. Thompson, Alaska, NCWM Chairman

G. W. Diggs, VA, Chairman-Elect

J.A. Rogers, Virginia, Treasurer

C. Carroll, Massachusetts

B. DeSalvo, Ohio

M. Hile, Arkansas

G. West, New Mexico

G. Ugiansky, NIST, Executive Secretary

T. Butcher, NIST, Technical Advisor

National Type Evaluation Program Committee

Appendix A

Report on the OIML Meeting International Working Group Meeting, OIML TC3 “Metrological Control” Barbara J. Bloch, Director, California Division of Measurement Standards June 1-3, 1999 Paris, France

Background: In December 1997, NCWM Chairman, Steve Malone, requested that Dr. Sam Chappell, Chief, Technical Standards Activities, Office of Standards Services, National Institute of Standards and Technology (NIST), organize a meeting of representatives of selected OIML member states to discuss the principles of mutual recognition of pattern (type) approval. Over the previous two years, discussions on this topic had been taking place with the United Kingdom and with the Netherlands. As a result of the request to Dr. Chappell, a meeting was held at NIST in April 1998, to discuss “Mutual Agreement for Utilization of Pattern Approval Certificates and Associated Test Reports in National Pattern Approval Program.” Nine countries and the Director of the BML attended this meeting in which a first draft on mutual agreement on OIML pattern evaluations was presented. In just a little more than a year, this document has progressed to the 4th draft.

OIML Meeting Participation: The United States, through Dr. Sam Chappell (NIST), serves as Secretariat to the Working Group. The US Delegation consisted of John Elengo (retired), serving as a technical consultant to NIST, Darrell Flocken, representing Mettler-Toledo, Gary Lameris, representing Hobart, Dr. Chappell and myself. Forty persons, representing 19 OIML member nations, one corresponding member state, the OIML Development Council, and two liaison organizations, the European Weighing Manufacturers Association and BML, were in attendance.

The meeting was very productive, primarily due to Dr. Chappell’s professionalism and ability to manage such a complex meeting. I would like to express my appreciation, and that of the NCWM, to Sam, for the support of his office in providing for our participation in this important meeting.

Meeting Decisions: While this Working Group meeting covered several agenda items related to the work of the various technical committees, the main focus was on the review, comments and proposed amendments to the 4th draft of the OIML Document on “Mutual Acceptance Agreement on OIML Pattern Evaluations”. The draft was reviewed, paragraph by paragraph and several changes agreed upon. These changes included the following:

- * detailing the requirements for participation in the Mutual Agreement in the Scope and wherever else as appropriate;
- * making provisions for an OIML member state to indicate that they would accept Certificates of Conformance under the Agreement (meaning that they would not necessarily become a testing jurisdiction as well);
- * making provisions for assessing the competency of the evaluation body and the certification body;

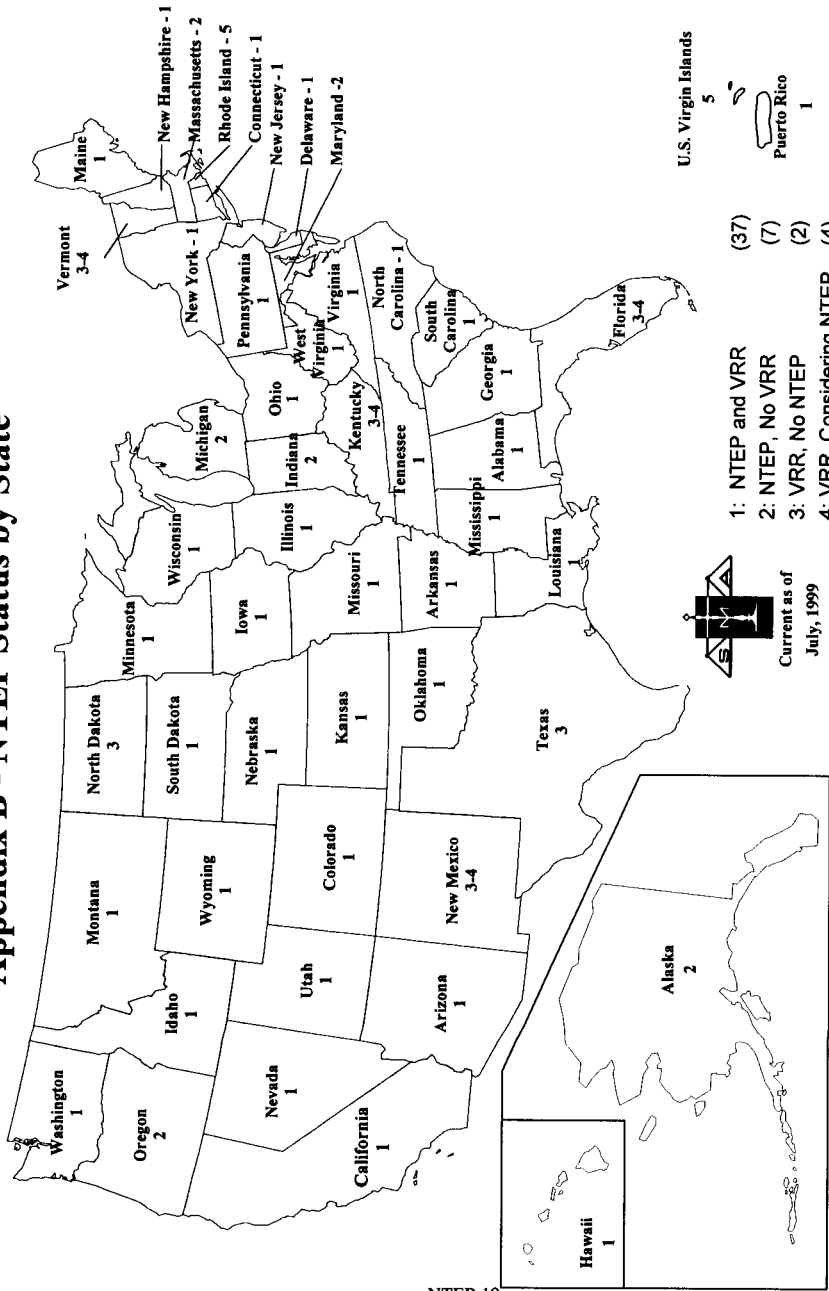
- * providing for use of either accreditation or peer review as the means for assessing competence for establishing mutual confidence;
- * requiring equivalency for either accreditation or peer review, as used to determine competency; agreeing that assessment teams be made up of experts for testing the category of instruments addressed, and would include at least one quality systems expert;
- * making the Questionnaire on National Capabilities, Appendix C in the document, generic; and
- * agreeing to develop supplementary documents for assessing the competency of participants, which would be based on existing or draft ISO/IEC Guides and Standards.

It was agreed that further written comments on the 4th Draft would be forwarded to the Secretariat by July 15th, and that the Secretariat would prepare a 5th Draft for distribution to participants by August 15, 1999. It was my understanding that a Draft report would be presented to the CIML in October, 1999, for endorsement of the objective, scope and work program.

Recommendations on NCWM Participation: As in previous years, my recommendations would be the same or similar to those from others who have had the honor to represent the NCWM at the various international meetings. I would respectfully submit the following:

1. That as the NCWM has played a major role in the initiative behind the drafting of the "Mutual Acceptance Agreement on OIML Pattern Evaluations", the NCWM should continue to play a major role in its development. This agreement could be an essential element in the removal of trade barriers and would further development of the global economy in the area of weighing and measuring devices. The success of the Mutual Recognition project with Canada can only serve as a positive example of benefits which accrue from such an effort. The establishment of a "one stop testing" program under a mutual confidence agreement is reasonable and can be accomplished. However, the development of the mechanisms identified in this recent meeting related to mutual confidence are critical if the NCWM is to commit to accepting test data from other OIML members' laboratories.
2. That future draft agreements continue to be shared with US manufacturers of weighing and measuring devices for comments. This input is critical to the success of any future agreement.
3. That wherever possible and appropriate, the NCWM should continue to support and assist the involvement of NIST in OIML and other international standards setting organizations. It continues to be critical for the NIST representatives who are presenting the US positions at OIML and other meetings to be knowledgeable as to the workings of the NCWM, and of the requirements of the Handbooks.

Appendix B - NTEP Status by State



- 1: NTEP and VRR (37)
- 2: NTEP, No VRR (7)
- 3: VRR, No NTEP (2)
- 4: VRR, Considering NTEP (4)
- 5: No NTEP, No VRR (2)

Current as of
July, 1999

NTEP: Uniform Regulation for National Type Evaluation
VRR: Uniform Regulation for Voluntary Registration of Service Persons and Service Agents

Appendix C

NTEP Long Term Business Plan Proposed Changes to NCWM Publication 14 to Address the Issue of Production Meeting Type and Challenges to an NTEP Certificate of Conformance Original Proposal

Proposed additions to Publication 14's administrative procedures:

Part I. Production Meeting Type

1. Amend the NTEP application to include a conditional statement that in the event the device would fail to meet its performance requirements, the manufacturer agrees to submit additional production models for future testing. This agreement must also stipulate that the manufacturer shall pay for the cost of such production device testing. The number of devices required to be submitted is something that will need to be determined.
2. All applicants agree to provide proof that production devices will meet type. Demonstrating that production devices will meet type may be satisfied by meeting one of the following requirements:
 - a. Submit one production device selected at random at least once every 3 years. The cost of such testing would be paid for by the manufacturer. If the device fails, additional devices will be selected at random, adequate in number to verify that production meets type. Production will meet type if 70 percent of the devices tested meet the NTEP checklist requirements. No preparation of the devices beyond normal customer installation will be allowed. The cost for all testing shall be paid for by the manufacturer. If the manufacturer fails to submit devices, the original certificate shall be withdrawn.
 - b. The manufacturer develops and maintains a quality control program to ensure that production meets type. Records are to be maintained and shall be made available to the NTEP Board of Governors (BOG) for review and analysis at any time requested. Those manufacturers participating in a quality control program must maintain ISO 9000 quality assurance standards.
 - c. The manufacturer develops other provisions which verify production can meet type. These provisions shall be approved by the BOG prior to their implementation.
3. In addition, it is essential that during the warranty period, the device meets type. Devices beyond the warranty period should not be included in any statistical data gathered to evaluate that production devices meet type. A standard shall be set to assure that only devices that truly represent the manufacturer's production model are evaluated. Devices outside the warranty limit, whether being tested for the first time or the tenth time, may not be truly representative of a device produced by the manufacturer.

Part II. Challenges to a Certificate

A challenge to an existing certificate may be brought by any Weights and Measures jurisdiction or by any member of the NCWM. The challenge shall list the name of the manufacturer, the certificate number, the specific model number of the device in question, the alleged deficiency to Handbook 44, and supporting documentation of the allegation. The challenge shall be submitted in writing along with the required information to the chairman of the NTEP Board of Governors (possibly through NIST). The BOG Chair will review and, if warranted, forward the information to the NIST NTEP Administrator. The NTEP administrator will assign an NTEP laboratory (or other competent representative) to conduct an investigation of the device in question.

Investigation:

If the device in question is of a type that can be evaluated in a laboratory, the investigating laboratory will obtain two of the devices picked at random by an NTEP representative (may be a local weights and measures official) from

either the warehouse stock or directly from the production line of the manufacturer. The two devices will be transported to the investigating laboratory for evaluation. (See section on field evaluation.) Both devices will be evaluated in accordance with the applicable checklist and test procedure from Publication 14. If both devices fail, it is statistically valid to say that production is not meeting type. If both devices pass, it will be assumed that production is meeting type. If only one of the devices passes, further testing may be required. The next level of testing would be a random sample of five devices selected and tested in the same manner as the initial two. If more than one of this group of five fails, it will be considered evidence that production does not meet type. If only one of five fails, more sampling and testing could be allowed with the next sample size of 10. If any of this group fails, it will be considered evidence that production does not meet type.

Corrective Action:

If the results of an investigation indicate that production does not meet type for a particular model, the manufacturer will be given the opportunity to, within 90 days, demonstrate that corrective measures have been taken to correct all units of a model already produced as well as all subsequent production. The corrective action will be verified by testing two additional units selected at random by an NTEP representative and submitted to the NTEP laboratory for evaluation.

Cost of Investigation:

Initially any costs incurred in the conduct of an investigation will be paid from the NTEP fund of the NCWM. If the investigation finds that production did not meet type, the entire cost of the investigation will be assessed to the manufacturer of the device. To discourage frivolous challenges, if a challenge to a certificate is initiated by a competing manufacturer and the investigation finds that production does in fact meet type, the entire cost of the investigation may be assessed to the entity that initiated the challenge. A deposit may be required at the time of submission of the challenge. (Amount to be determined.)

NTEP Initiation of Investigation:

If NTEP has reason to believe that production of a model does not meet type, the same procedures will be followed. The reason for this type of investigation could come from complaints by several jurisdictions or information from a national database which provides sufficient information to indicate that production does not meet type. In this type of investigation, if it is found that production meets type, NTEP will absorb the cost of the investigation. If it is found that production does not meet type, the cost will be assessed to the manufacturer of the device.

Devices Requiring Field Evaluation:

If a challenge is brought against a device or system that requires field evaluation, initially only the device which was brought into question will be evaluated. If the device or system passes the evaluation, it will be assumed that production meets type. If the device fails, a second device of the same type will be evaluated. If the second device fails, it will be determined that production does not meet type and the procedures outlined above will be followed.

Due Process Procedures:

See Publication 14 sections

Appendix D

NTEP Long Term Business Plan Proposal to Address the Issue of Production Meeting Type and Challenges to an NTEP Certificate of Conformance Alternative Proposal

Initial Verification Process, NTEP Laboratory Process, and Subsequent Verification Process

Note: this alternative proposal is intended for evaluation as to reasonableness, and would be intended to be integrated with the appropriate Sections of the Item 501-5 proposal “production meets type.” This proposal contains three parts: one to address the initial verification process, one to address the NTEP laboratory process, and one to address the subsequent verification process.

Part I. Initial Verification Process

This is an excerpt from the Scale Manufacturers Association (SMA) Metrology Control Plan:

The life cycle of a device begins when a product is first conceived by a manufacturer and is designed to its specifications as they are controlled by legal metrology requirements. Once this product has reached a certain level of development, a prototype or pre-production sample is submitted to an approved legal metrology laboratory for evaluation. [Editorial note: the participating laboratories frequently recommend that applicants verify compliance with applicable Publication 14 requirements before submitting the type to NTEP.] There it is evaluated according to the metrological requirements for that specific device. Once the device is determined to meet these requirements, it receives a certificate attesting to conformance with the applicable legal metrology requirements.

Typically, the manufacturer then proceeds with production of the device. Sales are made into the marketplace and, as these devices are placed into commercial service, they are subjected to an initial verification test by an official having statutory authority.

[This part is taken out of context of the SMA Metrology Control Plan.] The initial verification process will continue to see the serial production devices over a period of years under conditions attributable to the conformance-evaluated device. Assuming the data is collected with reasonable uniformity and is archived properly, production quality issues should become apparent in a timely manner for corrective action to be taken. It should be recognized that, over a period of time, the production process is subject to many variables at the level of component supply and the manufacturing process. Consequently, production devices need to be looked at for as long as they are in production.

Proposals:

That an initial verification system be developed within NTEP that would establish specific criteria (possibly by device type) for metrologically significant areas to be evaluated and reported during the initial installation by weights and measures officials (and possibly service agencies). Only devices found to be deficient in the specific criteria areas would be entered into the system.

(Comment: Consideration should be given to type of devices and applications where the installation can have a major affect on the performance of the device-e.g., vehicle, hopper, railroad, and belt-conveyor scales; loading-rack and vehicle-tank meters. The initial verification should be limited to the weighing/measuring element level.)

That a reporting form (to be developed) containing the above information be made a part of the examination procedure outlines (EPOs), and become a cooperative effort of weights and measures jurisdictions. (It is possible to establish a pilot program of several States to evaluate effectiveness.)

That a database be developed by NTEP to track the critical criteria and that performance standards be established to notify NTEP when a number (to be determined) of devices have failed the initial verification.

That criteria for device reevaluation be established to require a manufacturer (at the manufacturer's expense) to resubmit production devices to NTEP.

That criteria be established for the reevaluation if non-conformance to type is found (corrective action or withdrawal of the Certificate of Conformance [CC]).

Part II. Type Evaluation Process

Proposals:

That, if a device submitted to an NTEP laboratory fails in specific metrologically significant areas (to be determined, possibly by device type), the manufacturer is required to submit a second device for evaluation.

That, if the second device should fail in metrologically significant areas (as determined above), the manufacturer is required to submit evidence that a quality control plan is in place that provides a reasonable assurance that devices are capable of meeting the criteria for a CC and test data that indicates the "type" has passed all metrologically significant areas.

That, following successful evaluation of a quality control plan and submitted data, two additional production devices are submitted for approval. If the devices successfully complete the evaluation process, a CC is issued, with a report to NTEP requesting follow-up action in the future.

This follow up would be in two parts. First, that the device would be flagged for initial verification and the manufacturer would be required to provide site information to NTEP to contact the jurisdictions performing the first (three?) inspections and request results on specific performance, features, or parameters (problems encountered during type evaluation). Second, within 1 year, the manufacturer may be required to submit (at the manufacturer's expense) an additional production device for reevaluation.

If the two additional production devices should fail (in the areas determined above), future evaluation of the model type would be at the discretion of NTEP.

Part III. Subsequent Verification Process

This is an excerpt from the SMA Metrology Control Plan, but taken out of context.

Following the initial installation, the product is subjected to a variety of changes and interruptions (in a random order) and to periodic re-verifications of metrological performance. These changes may involve such things as connecting additional hardware (and/or software) to enhance the process, the user applying the device for an operation which was not intended when the equipment was originally placed in service, servicing the device with replacement parts which do not meet original specifications, and operator changes with subsequent retraining of new personnel.

Under the life cycle scenario, it is apparent that once a device moves out of its warranty period, it becomes subject to a spectrum of events which are increasingly out of the hands of the manufacturer. Therefore, subsequent verification will generally not be effective in identifying product non-conformance to type.

Proposal:

That a very limited set of criteria (to be determined) be established for reporting by weights and measures jurisdictions (and service agencies?) in areas of performance which would continue to be related to production meets type. Only reports of failures in the specified areas would be reported to NTEP. As with production meets type, specific evaluation criteria would need to be established to determine if a reevaluation is necessary.

Appendix E

NTEP Long Term Business Plan Work Group Status Report July, 1999

Presented by Barbara Bloch, Chairman, NTEP Work Group

The Work Group last met officially in Albuquerque, New Mexico; February, 3 and 4, 1999 in conjunction with the NCWM Interim Meeting. In attendance were members of the Work Group; Darrell Flocken, Lou Straub, Dick Suiter, Daryl Tonini, Jim Truex, Rich Tucker, Mike Belue, Tina Butcher, Debbie Joines, Bob Traettino and myself. Guests at the meetings included Steve Cook, Karen Glover, Gary Lameris and Diane Lee. The meetings were very productive, and the participation of all present was very much appreciated.

This report summary is presented in two parts; the first to address the business plan being developed by the Work Group, and the second to address "Production Meets Type" and "Challenges to a Certificate of Conformance". In addition, the body of the report addresses specific work as well as work in progress related to the business plan and the production meets type and challenges to a certificate.

As many of the decisions facing the NCWM Board/NTEP Committee regarding the management of the NTEP program will affect the status of the Work Group's process, this report is presented for your information and future consideration.

The Work Group appreciates the opportunity to present this information to you, and members are present to respond to any questions you may have.

Status Report Summary: Part I Long Term Business Plan for NTEP

Overall Objective: To Develop a Long Term Business Plan for Management of the National Type Evaluation Program

The development of a long term business plan for the NTEP program remains dependent on several factors which are identified on the Work Plan Objectives. Once some of the issues before the Board of Directors, NTEP Committee, and the NIST are resolved, the Work Group will be in a better position to come forward with recommendations for further actions. Considerable research has been done by members of the Work Group, which is detailed in the body of the report.

To assist the Board of Directors and the NTEP Committee in their decision making process regarding the structure of NTEP for the future, the Work Group has identified the following areas as needing further resolution or decision.

Work Group Objectives:

1. To identify potential liability for NIST/OWM and NCWM.

In order for the potential liability to be identified, it is necessary to resolve the question of who will provide overall management of the NTEP program. As this is one of the topics for the NCWM meeting in July, the Work Group will be prepared to respond accordingly in the near future.

2. To investigate disclaimers of liability on NTEP applications.

The Work Group recommends that the Board:

A. Consider amending Publication 14 and the individual NTEP Applications to contain a statement that companies agree to abide by Publication 14 Policies and Procedures.

B. Develop procedures whereby the company certifies that its product conforms to applicable Publication 14 checklist requirements and that production devices will meet all Handbook 44 requirements of the prototype device which was evaluated.

Editorial note: In reviewing this section, some members of the Work Group suggested that the amendments go a step further, and include a statement that the manufacturer would agree to withdrawal of the Certificate of Conformance if sufficient evidence is produced that production devices are not representative of the prototype device.

3. Review original intent of NTEP. (Check Publication 14 and Conference Reports.)

The Work Group has prepared a very detailed account of the history of NTEP and considers it sufficient for its intended

use. The Work Group has also examined the purpose and objectives of NTEP, as detailed in the history, and the consensus of the Work Group is that the original purpose and objectives of NTEP are basically sound. However, they may need to be expanded in light of the current needs of the program.

4. Objective 4 has been sub-divided into sections a through l, for development purposes.

Many of the decisions here will be made after key decisions are made. Detailed below are those sections where recommendations are made for future action.

4c. Roles and responsibilities of:

1. NIST
2. NCWM/NTEP BOG
3. Participating labs
4. Manufacturers
5. Weights and measures jurisdictions
6. Users

The roles and responsibilities of the parties to NTEP were researched from various historical documents by Work Group member Jim Truex and reviewed by the Work Group. Please see report detail for specifics.

The Work Group recommends that the reference to the NTEP Board of Governors be changed to "NTEP Committee" to reflect the current status of the NCWM, Inc. With that amendment, the Work Group reaffirms the roles and responsibilities of the parties to NTEP as being consistent with today's program.

4d. Who will provide overall management (check Publication 14 for current policy)

While the question of overall management of NTEP is still at issue (see objective 1), the Work Group recommends making amendments to Publication 14, as needed, to conform to the new Bylaws adopted in July, 1998. In addition, decisions from the Board of Directors regarding the future structure of NTEP may require changes in the responsibilities of some or all of the parties involved.

Example: Publication 14, Administrative Procedures, B. Administration, NTEP is operated by the following organizations:

1. Board of Governors--replace with language consistent with the Bylaws.
2. National Type Evaluation Technical Committee--amend to be consistent with the Bylaws.

NOTE: many of the historical documents refer to the NTEP Advisory Committee--*Reference to this Committee was eliminated in the Bylaw change and should be removed from use.*

Future Structure of NTEP:

The Work Group is charged with assisting in establishing the future structure of NTEP. The incorporation of the NCWM has impacted the federal laws which dictate the duties of federal government employees in their

dealings with corporations. Mike Rubin, NIST Counsel, has offered to use the resources of his office to research alternatives and to provide recommendations to the Work Group and the Conference for NTEP of the future. Background information has been provided to Mike Rubin regarding this subject, and has been discussed with the Board of Directors. Again, decisions on the overall management of NTEP will play a key role here.

4h. Roles and responsibilities of the NTEP technical sectors.

The Work Group recommends that Publication 14, and other reference documents, be amended to reflect the 1998 Bylaw changes, in that NTEP Sector members are now appointed by the NTEP Chairman.

4i. Maintenance of the model NTEP law and regulation.

The Work Group recommends that Handbook 130, Publication 14 and Publication 5 be amended as necessary to make the documents uniform. There is a concern that the language in the various documents is similar, but not identical.

On behalf of the Work Group, I would like to thank the Board of Directors and the NTEP Committee for consideration of these recommendations, and state that we look forward to receiving direction from you for future actions.

Status Report Summary: Part II

“Production Meets Type” and Challenges to a “Certificate of Conformance”

Overall Objective: To recommend amendments to Publication 14 for establishing procedures to manage a production meets type program, and to handle challenges to a Certificate of Conformance.

As you know, considerable time has been spent on “Production Meets Type” and “Challenges to a Certificate of Conformance”. Draft amendments to Publication 14 were included in the 1998 Interim Agenda, and 17 comment letters were received. About one half were positive and one half were negative--not even close to consensus. An alternative proposal was developed and reviewed by the group which involves collecting data from the States on initial verification of a device, if the device fails in identified metrological areas. Industry members agreed to share the proposal with their membership and responded to the group in December of 1998, so that it could be discussed in February at this year's (1999) Interim Meeting. This alternative proposal was one of the starting points for discussions by the Work Group.

As draft procedures for handling a challenge to a certificate were developed during the Interim Meeting by the NCWM Board/NTEP Committee, they have been included in the second part of the Work Group's draft.

The structure of NTEP in the future, to be determined by the Board of Directors and the NTEP Committee, in part from input at the June 4, 1999 Workshop, and from other data provided by the NIST and NCWM, Inc. Legal Counsels, will provide direction to the Work Group for future actions. At this time, the Work Group provides the draft documents currently under review for “Production Meets Type” and “Challenges to a Certificate of Conformance” for your future consideration.

Draft Proposals

Proposed additions to Publication 14's administrative procedures:

Part A. Administration:

1. Amend the NTEP application to include a conditional statement that, in the event the device fails to meet its performance requirements, the manufacturer agrees to submit additional production models for future testing. This agreement will stipulate that the manufacturer shall pay for the cost of such production device testing. The number of devices required to be submitted is something that will need to be determined. **(Note: given comments on this item, it was suggested that this be held for redrafting after the production meets type discussion matures further.)**
2. All applicants agree to provide proof that production devices will meet type. Demonstrating that production devices will meet type may be satisfied by: **(Note: to be further developed)**

A device manufacturer can adopt an NTEP approved production meets type program, or can adopt its own program provided that it can meet NTEP criteria. It is anticipated that the criteria under either option would essentially be the same. It may be possible to allow a company to elect to substitute production lot testing under some defined schedule in lieu of a production meets type quality program. This last option would be structured such that it would be uneconomical for large production levels. The NTEP Committee would be responsible for approving production meets type programs for device manufacturers.

NTEP Laboratory Process, Initial Verification Process and Subsequent Verification Process

Note: This proposal contains three parts: one to address the NTEP laboratory process, one to address initial verification and one to address the subsequent verification process.

Part I. Type Evaluation Process

Proposal:

That if a device submitted to an NTEP laboratory fails in specific metrologically significant areas (to be determined, possibly by device type), the device is returned to the manufacturer. The manufacturer may correct the device and reapply for type evaluation, including payment of application fees, and submission of a test data package to assure NTEP compliance. The device may be placed at the end of the laboratory testing queue.

Part II. Initial Verification Process

Proposal:

That an initial verification system be developed within NTEP that would establish specific criteria (possibly by device type) for metrologically significant areas to be evaluated and reported during the initial installation by weights and measures officials (and possibly service agencies). Only devices found to be deficient in the specific criteria areas would be entered into the system.

(Comment: consideration should be given to type of devices and applications where the installation can have a major affect on the performance of the device-e.g. Vehicle, hopper, railroad and belt-conveyor scales; loading rack and VTM meters. The initial verification should be limited to the weighing/measuring element level.)

That a reporting form containing appropriate information (to be developed) be made a part of the examination procedure outlines (EPO's), and become a cooperative effort of weights and measures jurisdictions. (Possible to establish a pilot program to evaluate effectiveness. Test criteria, testing standards, inspector training, etc. would all need to be considered in developing this proposal.)

That a database be developed by NTEP to track the critical criteria and that performance standards be established to notify NTEP when a number (to be determined) of devices have failed the initial verification.

That criteria for device reevaluation be established to require a manufacturer (at the manufacturer's expense) to resubmit production devices to NTEP.

That criteria be established for the reevaluation if non-conformance to type is found (corrective action or withdrawal of the Certificate of Conformance).

Part III. Subsequent Verification Process

Proposal:

To establish a very limited set of criteria (to be determined) for reporting by weights and measures jurisdictions (and service agencies?) in areas of performance which would continue to be related to production meets type.

As with production meets type, specific evaluation criteria would need to be established to determine if a reevaluation is necessary. (To be further developed.)

Part B. Challenges to a Certificate

A challenge to an existing certificate may be brought by any weights and measures jurisdiction or by any interested party. The challenge shall list the name of the manufacturer, the certificate number, the specific model number of the device in question, the alleged deficiency to Handbook 44, and supporting documentation of the allegation. The challenge shall be submitted in writing along with the required information to the Chairman of the NTEP Committee (possibly through NIST). The NTEP Committee Chair will review and if warranted, forward the information to the NIST NTEP Administrator. The NTEP administrator will assign an NTEP laboratory (or other competent representative) to conduct an investigation of the device in question.

Procedures to Address a Challenge to an NTEP Certificate of Conformance (CC)

(Note: These procedures were developed to address one specific device type. Modifications to the procedure will be made on a case-by-case basis to best address the specific type of device being challenged.)

The NTEP Committee will review the information and data provided by entity lodging the challenge. If the NTEP Committee finds there is sufficient information to continue, the following steps will be taken. If insufficient information is provided, the NTEP Committee will contact the challenger and identify the information required.

The NTEP Committee will consult with NIST statistical staff to determine number of devices that would need to be tested and how the results should be analyzed relative to selecting additional devices for test.

Locate sources of supply for the model of device being challenged. Attempt to determine the approximate number of the device in supply. Ask the supplier(s) if the manufacturer supplies special instructions, mountings, or other peripheral equipment for installing and using the device.

Send a letter to the entity lodging the challenge stating that NTEP will proceed with the complaint. Indicate that they may be responsible for the costs of the evaluation if the results of the evaluation show the devices meet the requirements.

Note that, unless NTEP hears from the challenger in 10 days, NTEP will proceed with the challenge. If the challenger objects to this condition, then NTEP will consider the challenge closed. The letter will also outline the procedures that NTEP will follow in addressing the challenge.

A letter will be sent to the company whose Certificate of Conformance is being challenged to notify them of the challenge and indicate the steps that NTEP will follow to address the challenge. The letter will indicate that, should the devices fail to meet requirements, the company holding the CC will be assessed the fees for testing and the CC may be withdrawn. NTEP recognizes that factors such as peripheral equipment and installation can be significant in device performance. If the company wishes to supply the required information or equipment or to provide additional instructions, they have the option of providing these. If the manufacturer wishes to participate in the testing they are welcome to do so. If the manufacturer objects to the proposed procedure, they must contact NTEP within 2 weeks. Note that the CC holder can request to have more cells tested than prescribed by NTEP during the challenge process; however, the CC holder is responsible for the costs of the additional testing.

Objections to the proposed procedures will be addressed on a case-by-case basis.

The testing process will begin with NTEP obtaining the devices to be tested. Two production devices of the model and capacity being challenged will be selected. An attempt will be made to get the devices from different distributors.

One device will be submitted to NTEP for testing.

If the resulting test data does *not* compare with test results submitted by the entity lodging the challenge (i.e., the device passes or its performance is significantly different) the challenger will be notified by phone and in

writing of the results. The challenger will be asked whether or not they want to proceed since they may be responsible for additional costs. If the challenger wishes to proceed, then NTEP will proceed to the next step.

If the first device fails, the second device is tested as described below.

The next device will be tested.

If the device passes, the complaint is resolved and both parties are notified.

If the device fails, then the holder of the NTEP CC is to be contacted and asked if they wish to proceed to test more devices in accordance with the statistical sampling plan. If the CC holder elects to take corrective action at that point, they will be asked to voluntarily suspend the Certificate which would also require them to recall all devices in their and their distributors' existing stock. If NTEP continues with testing of the devices and find that the devices continue to fail, NTEP can proceed to withdraw the Certificate and notify the States.

Cost of Investigation:

Initially any costs incurred in the conduct of an investigation will be paid from the NTEP fund of the NCWM. If the investigation finds that production did not meet type, the entire cost of the investigation will be assessed to the manufacturer of the device. To discourage frivolous challenges, if a challenge to a certificate is initiated by a competing manufacturer and the investigation finds that production does in fact meet type, the entire cost of the investigation may be assessed to the entity that initiated the challenge. A deposit may be required at the time of submission of the challenge. (Amount to be determined).

NTEP Initiation of Investigation:

If NTEP has reason to believe that production of a model does not meet type, the same procedures will be followed. The reason for this type of investigation could come from complaints by several jurisdictions or information from a National Data Base which provides sufficient information to indicate that production does not meet type. In this type of investigation, if it is found that production meets type, NTEP will absorb the cost of the investigation. If it is found that production does not meet type, the cost will be assessed to the manufacturer of the device.

Devices Requiring Field Evaluation:

If a challenge is brought against a device or system that requires field evaluation, initially only the device which was brought into question will be evaluated. If the device or system passes the evaluation, it will be assumed that production meets type. If the device fails, a second device of the same type will be evaluated. If the second device fails, it will be determined that production does not meet type and the procedures outlined above will be followed.

Due Process Procedures:

See Publication 14 sections.

Appendix F
NTEP Participating Laboratories Report *
January - July 1999

| Activity | 1995 | 1996** | 1997 | 1998 | 1999 to date |
|---|------|--------|------|------|--------------|
| Number of Applications Received ¹ | 328 | 386 | 387 | 321 | 169 |
| Number of Mutual Recognition Applications Received | 32 | 38 | 68 | 67 | 29 |
| Number of Type Evaluations Performed ² | 280 | 317 | 352 | 355 | 145 |
| Number of Activities Assigned ³ | 449 | 574 | 639 | 560 | 281 |
| Number of CCs that became EFFECTIVE | 260 | 310 | 298 | 252 | 171 |
| Number of CCs ISSUED | 188 | 322 | 279 | 260 | 198 |
| Number of Requests WITHDRAWN | 75 | 80 | 82 | 51 | 63 |
| Average Time (weeks) to Perform Activities for Successful⁴ Type Evaluations | | | | | |
| "Date Assigned" to "Equipment Received" | 10 | 10 | 8 | 11 | 10 |
| "Equipment Received" to "Type Evaluation Complete" | 8 | 7 | 6 | 7 | 8 |
| Type Evaluation Complete" to "CC Effective" | 5 | 6 | 2 | 4 | 7 |
| "CC Effective" to "To NIST" | 19 | 16 | 14 | 9 | 13 |
| "To NIST" to "CC Issued" | 8 | 7 | 9 | 8 | 7 |
| "Date Assigned" to "CC Issued" | 55 | 43 | 44 | 36 | 49 |

* This report is designed to show the amount of activity in all the labs involved in the National Type Evaluation Program. In July 1998 a new database was put into operation. While all information from the old database was converted into the new database, some old records may be incomplete.

** 1996 figures may be inflated due to Federal government furlough in 1995.

¹ 2 OIML requests for R60

² Beginning in 1994, if a device failed a type evaluation (i.e., an actual lab or field test), it was entered as a new type evaluation. Previous to 1994, multiple failures of the same device were still considered as a single type evaluation. A re-test is considered a new type evaluation.

³ Many type evaluations and applications require the assignment of multiple labs in order to accomplish *one* evaluation. In years prior to 1998, one request was recorded as one laboratory doing the work regardless of how many labs were involved in the evaluation. Additionally, multiple tests may need to be performed in order to accomplish one evaluation. For example, the range of capacities of a load cell family may include testing one capacity in California, one by the Force Group at NIST, and the CC may be drafted by someone in the Office of Weights and Measures at NIST. Thus, three (3) activities were necessary for this particular load cell family to get a CC. Additionally, if a device fails type evaluation one (1) time and had to be re-tested, two (2) activities were necessary to result in one CC.

⁴ An evaluation in which the device does not fail at any point.

Participating Laboratories Evaluation

| Activity | Date | CA | MD | NY | OH | FG | NIST | OTHER | TOTAL |
|---|--------------|----|----|----|-----|----|------|-------|------------------|
| Number of Applications Received | 1995 | 55 | 34 | 23 | 60 | 23 | 97 | 36 | 328 |
| | 1996 | 75 | 29 | 29 | 68 | 17 | 138 | 30 | 386 ¹ |
| | 1997 | 62 | 36 | 27 | 100 | 30 | 103 | 29 | 387 |
| | 1998 | 52 | 25 | 32 | 74 | 21 | 78 | 28 | 321 |
| | 1999 to date | 20 | 16 | 9 | 32 | 10 | 66 | 16 | 169 |
| Number of Type Evaluations ² Performed | 1995 | 58 | 50 | 35 | 75 | 14 | 20 | 28 | 280 |
| | 1996** | 62 | 85 | 32 | 80 | 9 | 17 | 32 | 317 |
| | 1997 | 72 | 56 | 46 | 94 | 25 | 28 | 31 | 352 |
| | 1998 | 72 | 51 | 38 | 100 | 23 | 36 | 35 | 355 |
| | 1999 to date | 28 | 19 | 16 | 34 | 15 | 18 | 15 | 145 |
| Number of Paper Updates ³ | 1995 | 1 | 3 | 1 | 3 | | 77 | 3 | 88 |
| | 1996 | 8 | -- | -- | 2 | | 104 | 1 | 115 |
| | 1997 | 16 | -- | 5 | 7 | | 84 | -- | 112 |
| | 1998 | 3 | -- | -- | 7 | | 73 | -- | 83 |
| | 1999 to date | 6 | -- | 1 | -- | | 48 | -- | 55 |
| Number of Effective Certificates | 1995 | 49 | 12 | 16 | 58 | 15 | 87 | 23 | 260 |
| | 1996 | 49 | 22 | 13 | 49 | 18 | 124 | 35 | 310 |
| | 1997 | 50 | 15 | 18 | 66 | 17 | 111 | 21 | 298 |
| | 1998 | 31 | 13 | 10 | 82 | 16 | 76 | 24 | 252 |
| | 1999 to date | 31 | 8 | 8 | 24 | 12 | 77 | 11 | 171 |
| Number of Certificates Issued | 1995 | 37 | 7 | 8 | 36 | 7 | 78 | 15 | 188 |
| | 1996 | 59 | 18 | 18 | 73 | 22 | 110 | 22 | 322 |
| | 1997 | 42 | 23 | 19 | 66 | 10 | 86 | 33 | 279 |
| | 1998 | 37 | 14 | 10 | 79 | 18 | 73 | 29 | 260 |
| | 1999 to date | 26 | 4 | 10 | 30 | 17 | 104 | 7 | 198 |

¹ Number may be inflated due to Federal government furlough in December 1995.

² Type Evaluation indicates an actual lab or field test.

³ A paper update includes any activity that does not require testing, i.e, private labeling requests, error corrections, non-metrological changes to CC, etc.

**There was a discrepancy in the manner in which the participating labs recorded data; the results, therefore, may be skewed.

Appendix G
Reduction of Certificate of Conformance Backlog at NIST

July 22, 1999

| Certificates Assigned to NIST Reduction of Backlog | | | |
|---|--------------|-----------------------|-----------|
| | October 1998 | October 98 -- July 99 | July 1999 |
| Open Files Total | 126 | | 66 |
| Drafted, Faxed to Manufacturer | 6 | | 19 |
| Drafted, In Final Review | 18 | | 30 |
| Waiting for Testing | 7 | | 12 |
| To Be Drafted | 95 | | 5 |
| New Requests Assigned, Drafted, & Issued | | 55 | |

The above table illustrates the progress that has been made on the reduction of the backlog of Certificates of Conformance assigned to NIST. The table outlines the status as of October 1998 (the beginning of Federal Fiscal Year 1999); the total number of new requests assigned, drafted, and processed between October 1998 and July 1999; and the status of the NIST-assigned Certificates as of July 1999. NIST-assigned Certificates of Conformance include Certificates such as those which are being updated without the need for testing, those issued for load cells tested by NIST; and those issued to correct errors noted on the original Certificates.

The reduction in the backlog has been possible due to the work of a part-time person hired by NIST-OWM in January 1999 to eliminate the backlog and maintain the turnaround time for Certificate drafting at NIST. As noted in the figures above, the number of files awaiting action by NIST has been reduced from a total of 95 to a total of 5 files awaiting drafting of the Certificate. At the beginning of the fiscal year, the number of Certificates waiting to be drafted represented 75% of the total open files; as of July the number of Certificates waiting to be drafted represent only 8% of the total open files. Note that, in addition to the 126 files open as of October 1998, 55 new assignments have been completed.

In subsequent reviews of the status of NIST-assigned Certificates, a comparison will be made of the average time for NIST-OWM to draft and issue Certificates; these figures were not included in this assessment since the existence of the backlog up to this time would have skewed the numbers.

Appendix H
National Type Evaluation Technical Committee
Belt-Conveyor Scale Sector
Meeting Summary
October 5, 1998, Sacramento, CA

Agenda Items

1. Update to NCWM Publication 14 to Reflect Changes to NIST Handbook 44

- A) N.3.2. Material Test and N.3.2.1. Accuracy of Material (a)
 - B) UR.2.2.1. For Scales Not Installed by the Manufacturer (b)
 - C) UR.2.2.1. For Scales Not Installed by the Manufacturer (c)
 - D) UR.2.2.1. For Scales Not Installed by the Manufacturer (g)
 - E) UR.2.2.1. For Scales Not Installed by the Manufacturer (h)
 - F) UR.2.2.1. For Scales Not Installed by the Manufacturer (j)
 - G) S.2.2. Adjustable Components, S.5. Provision for Sealing, and Table S.5. Categories of Device and Method of Sealing
- 2. Examination Procedure Outline (EPO)**
- 3. Substitution of Load Cells in Belt-Conveyor Scales**
- 4. Parameters to be Included on Certificates of Conformance**
- 5. Last Serial Number for INACTIVE Certificates of Conformance (CCs)**
- 6. Certificates of Conformance (CCs) for Computer Software**
- 7. N.3.2.1. Accuracy of Material**
- 8. For Scales Not Installed by the Manufacturer**
- 9. Installation Requirements**
- 10. Recording Elements and Recorded Representation**
- 11. Design of Zero Setting Mechanism**

1. Update to NCWM Publication 14 to Reflect Changes to NIST Handbook 44

Background: The 83rd National Conference on Weights and Measures (NCWM) adopted the following changes that will be reflected in the 1999 edition of NIST Handbook 44 and NCWM Publication 14. These items were included as part of the agenda to inform the Belt-Conveyor Scales Sector of changes that will immediately affect National Type Evaluation Program (NTEP) policy and procedures.

A) N.3.2. Material Test and N.3.2.1. Accuracy of Material (a)

Background: The Western Weights and Measures Association (WWMA) Specifications and Tolerances (S&T) Committee received a recommendation during its 1997 annual meeting to remove the sentence in N.3.2. which recommended that a substitution test is performed for the material test of a belt-conveyor scale system. The WWMA forwarded the proposal to the Northeastern Weights and Measures Association and to this Sector, who in turn sent the proposal to the NCWM. This Sector recommended that references to the substitution test be relocated to N.3.2.1. and that additional wording be added to N.3.2.1. to clarify the specific details of the test procedure. The NCWM included the recommendation on its 1998 agenda as an informational item, hoping to collect additional information by its 1999 meeting. Supporters of the recommendation believe that reference to the substitution test in N.3.2. creates confusion because N.3.2. addresses the test of a belt-conveyor scale system, while the substitution test is intended for evaluating the reference scale. Opponents to the recommendation, especially with respect to the wording proposed by this Sector, contended that the changes would impose an unfair, and possibly unnecessary, burden on belt-conveyor scale owners and the railroads.

Discussion: The Sector reviewed the proposal that it forwarded to the NCWM S&T Committee in 1997. During the discussion, several Sector members acknowledged that no formal definition exists for a substitution test. Consequently, many times the reference scale is mistakenly tested using only a strain-load test. The Sector recognized that a strain-load test alone is inappropriate for type-evaluations. The Sector reviewed the field test requirements for the reference scale in Section 14 of the Belt-Conveyor Scale Checklist.

Conclusion: The Sector decided that, in most cases, the NTEP laboratory should apply the substitution test procedures to test the reference scale before performing the type evaluation of a belt-conveyor scale system; however, the Sector recognized that further consideration should be given to the various types of reference scales and special constraints which may apply to these devices. Consequently, the Sector did not agree to immediately add this requirement to Publication 14. The Sector established a work group to review the Field Test Procedures that are currently included in Section 14 of the Belt-Conveyor Scales Checklist.

The workgroup consists of Dick Suiter (NIST), Chairman; Tom Vormittag (Commercial Testing & Engineering); Larry Turberville (AL); and Lou Cerny (Association of American Railroads). The Sector invited GIPSA to appoint a representative to participate on the work group. By the next Sector meeting, the work group hopes to determine whether or not the current procedures adequately address the test of a reference scale. A specific challenge for the work group is to develop criteria for the selection of a reference scale for use during type evaluations and during routine evaluations. The Sector agreed that the minimum test requirements for type evaluation should remain more restrictive than the test requirements for routine field evaluations. For example, for routine field evaluations, a strain load test is sometimes considered satisfactory for certain locations, while for a type evaluation at the same location, the laboratory may perform a substitution test to verify the accuracy and suitability of the reference scale selected for the evaluation. The work group will spell out the substitution test procedure for various types of scales.

B) UR.2.2.1. For Scales Not Installed by the Manufacturer (b)

Background: Based upon a 1997 recommendation by this Sector, the NCWM added the following sentence to UR.2.2.1. at its 1998 Annual Meeting: "Training idlers shall not be restrained at any time in order to force belt alignment." This item was included on the Sector's agenda to inform the Sector of the change to Handbook 44.

Discussion and Conclusion: The Sector acknowledged the change to Handbook 44 and agreed to add the following statement to Publication 14:

9.7.7.1. Training idlers shall not be restrained at any time to force belt alignment. This change should not have a significant impact on the type-evaluation of belt-conveyor scale systems.

While reviewing this issue, the Sector also began a discussion related to item 8 of the agenda. See item 8 in this report for details.

C) UR.2.2.1. For Scales Not Installed by the Manufacturer (c)

Background: Based upon a 1997 recommendation by this Sector, the NCWM modified UR.2.2.1.(c) at its 1998 Annual Meeting, to better define where a concave curve may be installed in a belt-conveyor scale system.

Discussion and Conclusion: The Sector acknowledged the changes to UR.2.2.1.(c) and agreed to change paragraph 9.7.8. of Publication 14 as follows:

9.7.8. If there is a concave curve in the conveyor ~~between the scale and the loading point~~ before or after the scale, the scale shall be installed so that the belt is in contact with all the idlers rollers at all times for at least 20 feet (6 m) or 5 idler spaces, whichever is greater, before and after the scale. A concave curve shall start no closer than 40 ft (12 m) from the scale to the tangent point of the concave curve.

D) UR.2.2.1. For Scales Not Installed by the Manufacturer (g)

Background: At its 1998 Annual Meeting, the NCWM modified UR.2.2.1.(g) to require that 5 idlers, instead of 4 idlers, on either side of the scale are identified as being part of the scale system.

Discussion and Conclusion: The Sector acknowledged the changes to UR.2.2.1.(g) and agreed to change Publication 14, Paragraph 9.7.12. of the Belt-Conveyor Scale checklist to read:

9.7.12. The scale area and 4-5 idlers on both ends of the scale shall be of a contrasting color, or other suitable means shall be used to distinguish the scale from the remainder of the conveyor installation.

E) UR.2.2.1. For Scales Not Installed by the Manufacturer (h)

Background: Based upon a 1997 recommendation by this Sector, at its 1998 Annual Meeting, the NCWM modified UR.2.2.1.(h) to better identify if a scale is installed with the appropriate equipment. This item was included on the Sector's agenda to inform the Sector of the change to Handbook 44.

Discussion: The Sector acknowledged that, based upon its recommendation in 1997, Handbook 44 now specifies that "under no load or loaded the belt shall make full contact with the carry roll."

The Sector also acknowledged that, in many cases, it is impossible to verify that the belt remains in full contact with the carry roll. In its review of the changes to this paragraph, the Sector agreed that the new wording in Handbook 44 does not communicate the Sector's original intent for modifying the language in Handbook 44 and leaves room for interpretation. The Sector agreed that the trough angle, quality of the belt, and belt temperature could each affect how the belt contacts the idlers. The Sector is most concerned with idlers, which either intermittently contact the belt or do not contact the belt at all.

Conclusion: To better reflect its original intent to modify UR.2.2.1.(h), the Sector proposed that the NCWM Specifications and Tolerances Committee further modify UR.2.2.1.(h) to read:

UR.2.2.1.(h) Conveyor belting shall be no heavier than is required for normal use. Under no load or loaded, the belt shall make full continuous contact with the carry roll (center or horizontal portion) of the idlers. Splices shall not cause undue disturbance in scale operation (see N.3).

The Sector agreed to change Publication 14, paragraph 9.7.13.1. of the Belt-Conveyor Scale checklist to read:

9.7.13.1. Under any no load or loaded, the belt shall make continuous contact with the carry roll (center or horizontal portion) of the idlers.

F) UR.2.2.1. For Scales Not Installed by the Manufacturer (j)

Background: Based upon a 1997 recommendation by this Sector, at its 1998 Annual Meeting, the NCWM modified UR.2.2.1.(j) to require that the belt not extend beyond the edge of the idler roller in any area of the conveyor.

Discussion and Conclusion: The Sector acknowledged the changes to paragraph UR.2.2.1.(j) and agreed to change paragraph 9.7.15. of the Belt-Conveyor Scale checklist to read:

9.7.15. The belt shall not extend beyond the edge of the idler roller in any area of the conveyor.

G) S.2.2. Adjustable Components, S.5. Provision for Sealing, and Table S.5. Categories of Device and Method of Sealing

Background: Based upon a 1997 recommendation by this Sector, at its 1998 Annual Meeting, the NCWM added Table S.5. to the Belt-Conveyor Scale Systems Code in Handbook 44 to describe the acceptable provisions for sealing.

Discussion and Conclusion: The Sector acknowledged the changes to Handbook 44. The Sector agreed that the appendices on audit trails from the Scales Checklist in Publication 14 should be incorporated, as appropriate, into the Belt-Conveyor Scales Checklist with changes made to the sealing categories to reflect the differences between static scales and dynamic belt-conveyor scales and differences in the Handbook 44 codes for these devices.

2. Examination Procedure Outline (EPO)

Background: During its 1996 meeting, the Sector developed a subcommittee consisting of Norman Johnson (Merrick Industries), Chairman of the Sector and the subcommittee, Steve Cook (California), and Larry Turberville (Alabama) to develop an Examination Procedure Outline (EPO) for Belt-Conveyor Scale Systems. At its 1997 meeting, the Sector agreed to finalize a draft EPO that could be forwarded to the NCWM Administration and Public Affairs (A&P) Committee with a recommendation to include the EPO in a future edition of NCWM Publication 12.

Discussion: The Sector briefly reviewed a draft EPO for belt-conveyor scales developed by Max Cassanova (Ramsey Technology) and Norm Johnson. The Sector acknowledged that the EPO needed further development and that regional weights and measures jurisdictions could provide valuable comments to improve the checklist. The Sector agreed that appropriate test forms would improve the procedure. The Sector pointed out that the test forms should include the formulas required to perform the calculations recorded on the form along with examples to accompany any difficult equations. In addition, the EPO should include sections on safety and required materials/equipment.

Conclusion: Sector members will review the draft EPO which was distributed at the Sector meeting and submit comments to Thomas Ahrens, Technical Advisor, by October 16, 1998. Tom Ahrens and Norm Johnson will work together to finalize the document and a final draft will be sent to the Sector with a ballot. If the ballot results indicate Sector support for the final draft, the document will be submitted to the A&P Committee. The Technical Advisor will also consult with the A&P Committee Chairman and Technical Advisor to determine whether or not the EPO might be included on their agenda as a developmental item to generate feedback and comments for development of a finalized EPO.

3. Substitution of Load Cells in Belt-Conveyor Scales

Background: Section E at the beginning of the Publication 14 Belt-Conveyor Scales Checklist had specified that under specific circumstances a Certificate of Conformance could cover a range of belt-conveyor scales based upon the test of a system using non-NTEP load cells. The Sector was asked to review the existing policy to determine if the criteria were appropriate, considering the factors that influence dynamic weighing systems.

Discussion and Conclusion: The Sector agreed to replace the text in Section E of the Belt-Conveyor Scales Checklist of Publication 14 with the text of Section B.4. of the Scales Checklist in Publication 14. The Sector agreed that the criteria should not apply retroactively to existing CCs, but to apply the criteria to requests to expand existing CCs or to request type evaluation of a new model. Manufacturers should provide NTEP a summary of the models and capacities of the load cells used in each device covered by an NTEP CC. Section E will now read:

E. Criteria for Scales Not Using NTEP Load Cells

For a given family of devices, to determine the capability of the series to comply with the influence factors requirements, NTEP will require testing as follows:

- a. a single device in the middle of the range between smallest and largest capacity may be tested in an environmental chamber to include the entire series provided:
- b. the device tested will not generally exceed a 4:1 ratio from either extreme of capacities; and
- c. the range of capacities from lowest to highest shall not exceed a 10:1 ratio unless more than one device is tested.
- d. several devices in the series may be tested as described above to cover a wider range of capacities.

In addition to demonstrating compliance with influence factors requirements, additional capacities within the series may be selected for conducting other required NTEP tests.

4. Parameters to be Included on Certificates of Conformance

Background: Section B at the beginning of the Publication 14 Belt-Conveyor Scales Checklist defines the range of parameters that NTEP will cover on a Certificate of Conformance (CC), based upon the test of one or several belt-conveyor scale systems. NTEP management was concerned that the range of parameters provided in Publication 14 is too broad and does not provide sound technical policy. The concern originated because static scales used to measure the same products must undergo testing over a range of capacities in order to cover the same range of operating parameters.

Discussion and Conclusion: The Sector agreed that the criteria presently included in Publication 14 for parameters of devices to be covered on a CC are appropriate and no changes are needed.

5. Last Serial Number for INACTIVE Certificates of Conformance (CCs)

Background: When a CC becomes inactive, the manufacturer currently has the option to supply NTEP with the serial number of the last device manufactured. This number is listed in NCWM Publication 5. If a manufacturer did not supply the last serial number, it was difficult for weights and measures jurisdictions to determine when a manufacturer was manufacturing its product after the CC became inactive.

The Sector received a request to discuss this issue after one weights and measures jurisdiction found a device being sold years after its CC became inactive, for which NTEP did not have a serial number on file. In its review of this issue, the Measuring Sector agreed to support the following changes to the definition for “Inactive Status” in the NTEP Administrative Policy at the front of Publication 14.

3. Inactive Status

An INACTIVE Certificate of Conformance is a Certificate which was previously active, but the devices are no longer being manufactured or re-manufactured for commercial applications. ~~However, devices already manufactured, installed, or in inventory, but not yet sold, may be used, sold, repaired, and resold under an~~ INACTIVE Certificate of Conformance, provided that the manufacturer supplies NTEP with the serial number and/or date code of the last device of that model manufactured for commercial applications. The serial number and/or date code must be provided at the time that the manufacturer first designates the Certificate as INACTIVE. If the manufacturer chooses not to provide the last serial number and/or date code for the device model, the Certificate of Conformance will not apply to any devices of that model sold after the date that the Certificate becomes INACTIVE.

Discussion: The Sector identified two potential problems with the proposal. The first problem was that serial numbers are not always sequential. The second problem was that this recommendation may harm the device distributor and/or device owner more than the device manufacturer. A suggestion was made to amend the proposal to allow manufacturers other options for identifying the last device that they manufactured.

Conclusion: The Sector included this item on its agenda to ask for additional information. Sector members were encouraged to submit comments to the NTEP Committee.

The Sector was concerned that this proposal will penalize the supplier more than the manufacturer, if the manufacturer goes out of business and does not provide the last serial number for its devices. The Sector agreed that manufacturers should be allowed the option of including the device serial numbering scheme and/or dating scheme on the Certificates of Conformance.

6. Certificates of Conformance (CCs) for Computer Software

Background: Steve Malone, Past-Chairman of the NCWM, appointed a work group to determine whether or not NTEP should continue to issue CCs for software. The Software Work Group decided that, in the future, NTEP will only evaluate software as part of a metrological system. Based upon this decision, the Measuring Sector formed a work group to redesign the CC that NTEP issues for software-based measuring systems. The Belt-Conveyor Scales Sector was invited to provide feedback and appoint a representative to the workgroup.

Discussion and Conclusion: The Technical Advisor reviewed the issue with the Sector. After reviewing the issue, the Sector determined that the complexity and design of belt-conveyor scale systems are such that NTEP CCs for these devices are already oriented toward a system-based approach and few changes will be needed to belt-scale CCs to reflect the NCWM's decisions. Consequently, the Sector agreed not to appoint a representative to attend meetings scheduled by the workgroup.

7. N.3.2.1. Accuracy of Material

Background: At its 1997 meeting, the Sector developed a proposal to modify paragraph N.3.2.1. Accuracy of Material. The Sector forwarded this proposal to the NCWM Specifications and Tolerances (S&T) Committee. The S&T Committee marked the proposal as "Informational."

The proposal would require the reference scale used during a material test to be tested before and after the material is weighed to verify that the scale remains accurate throughout the test.

Discussion: The Sector reviewed the proposal that it submitted to the S&T Committee after its 1997 meeting. Lou Cerny (AAR) invited several people to the meeting to represent the railroads' position on the recommendation. The railroad representatives each expressed their concern that, if the NCWM votes to make the proposed changes to Handbook 44, the railroads will have to invest what they consider an unreasonable amount of manpower and money to comply with the requirement.

Several Sector members supported allowing the follow-up tests to be performed using a "monitor" car in place of known test weights. A "monitor" car is a rail car or vehicle with a constant weight. Instead of reapplying known test weights, the inspector would weigh the monitor car immediately after testing the reference scale to determine the weight of the car. At any time during the material test, the monitor car could be weighed to determine if the reference scale was maintaining accuracy. The railroad representatives did not feel that adopting this change to the proposal would resolve their concerns. Their contention was that many belt-conveyor scales are installed in remote locations where environmental effects could bias the results by changing the weight of the monitor car, for example, if snow or ice accumulated on the car.

One Sector member recalled that during the 1998 Western Weights and Measures Association meeting, a state weights and measures official pointed out that a recent study showed that 74 percent of the railway-track scales tested by one weights and measures jurisdiction failed to meet Handbook 44 tolerances.

The Sector recognized the importance of the accuracy of the reference scale; however, the Sector was unable to reach a consensus on this issue. Consequently, the Sector formed a workgroup to determine how to retest the reference scale. After forming the workgroup, the Sector voted on four questions to determine the general disposition of the Sector on this item to provide feedback to the S&T Committee. The questions were as follows:

A) Should the Sector recommend that this item be withdrawn from the NCWM S&T Committee's agenda?

Result: Only one member felt that the item should be withdrawn from the S&T agenda.

B) Should the Sector continue to support the retest of the reference scale?

Result: 8 members supported retesting the reference scale; 1 member opposed retesting the reference scale.

C) Should the Sector form a subcommittee to clarify the second test?

Result: 8 members supported forming a subcommittee; no members opposed forming a subcommittee.

Conclusion: The Sector continues to support its original proposal to the S&T Committee to require jurisdictions to test the reference scale before and after a material test. The Sector acknowledged that additional guidance is needed to define the amount and type of testing appropriate for the subsequent test of a reference scale. The Sector formed a subgroup to review the issue of the subsequent test and to develop a recommendation for the S&T Committee. Volunteers for the subgroup include: Tom Ahrens (NIST), Lou Cerny (AAR), Steve Cook (CA), Will Cunningham (Burlington Northern Santa Fe), Ken Knapp (Milltronics), Dick Suiter (NIST), and Willie Yager (TUCO, Inc.). The Sector asked the Technical Advisor to ask for participation from Bob Feezor (Norfolk Southern) and someone from Southern Company Services.

The Sector agreed that this issue should stay on the S&T agenda.

8. For Scales Not Installed by the Manufacturer

Background: Several of the regional weights and measures jurisdictions have questioned why belt-conveyor scale systems installed by the manufacturer are not required to meet the same standards as scales which are not installed by the manufacturer. The questions were specifically directed toward paragraph UR.2.2. of the Belt-Conveyor Scale Systems Code of Handbook 44.

Discussion: The Sector considered the value of providing additional requirements for belt-conveyor scales that were not installed by the manufacturer. The Sector agreed that Handbook 44 should require the same specifications for belt-conveyor scale systems whether or not the system was installed by the manufacturer. The Sector noted that the Handbook 44 code for belt-conveyor scale systems was written for mechanical scales. Consequently, the code should eventually be reviewed to determine if requirements, such as UR.2.2. should be rewritten.

Conclusion: Since the Sector had no clear justification for applying separate requirements to scales installed by the manufacturer and scales not installed by the manufacturer, the Sector agreed to submit a proposal to the S&T Committee to modify Sections UR.2.2. and UR.2.2.1. as follows:

UR.2.2. Conveyor Installation. - The design and installation of the conveyor leading to and from the belt-conveyor scale is critical with respect to scale performance. The conveyor may be horizontal or inclined, but, if inclined, the angle shall be such that slippage of material along the belt does not occur. Installation shall be in accordance with the scale manufacturer's instructions and the following:

- (a) a belt-conveyor scale shall be so installed that neither its performance nor operation will be adversely affected by any characteristic of the foundation, supports, or any other equipment;
- (b) all live portions of the scale shall be protected by appropriate guard devices to prevent accidental interference with the weighing operation;
- (c) suitable protection shall be provided for storage of any simulated load equipment.

~~**UR.2.2.1. For Scales not Installed by the Manufacturer.** Unless the scale is installed in a short conveyor designed and furnished by the scale manufacturer or built to the scale manufacturer's specifications, the conveyor shall comply with the following minimum requirements:~~

(a d) Take-up Device. - If the belt length is such that a take-up device is required, this device shall be of the counter-weighted type for either vertical or horizontal travel.

(b e) Scale Location and Training Idlers. - The scale shall be so installed that the first weigh idler of the scale is at least 6 m (20 ft) or 5 idler spaces, whichever is greater, from loading point, skirting, head or tail pulley, or convex curve in the conveyor. Any training idler shall be located at least 18 m (60 ft) from the center line of the weigh span of the scale.

(e f) Concave Curve. - If there is a concave curve in the conveyor between the scale and the loading point, the scale shall be installed so that the belt is in contact with the idlers at all times for at least 6 m (20 ft) or 5 idler spaces, whichever is greater, before and after the scale.² A concave curve beyond the scale shall start no closer than 12 m (40 ft) from the scale.

(d g) Tripper and Movable Pulleys. - There shall be no tripper or movable head pulleys in the conveyor.

(e h) Conveyor Length. - The conveyor shall be no longer than 300 m (1000 ft) nor shorter than 12 m (40 ft) from head to tail pulley.

[Nonretroactive as of January 1, 1986.]

(f i) Conveyor Stringers. - Conveyor stringers at the scale and for not less than 6 m (20 ft) before and beyond the scale shall be continuous or securely joined and of sufficient size and so supported as to eliminate relative deflection between the scale and adjacent idlers when under load. The conveyor stringers should be so designed that the deflection between any two adjacent idlers within the weigh area does not exceed 0.6 mm (0.025 in) under load.

(g j) Identification of Scale Area. - The scale area and 4-5 idlers on both ends of the scale shall be of a contrasting color, or other suitable means shall be used to distinguish the scale from the remainder of the conveyor installation, and the scale shall be readily accessible.

(h k) Belt Composition and Maintenance. - Conveyor belting shall be no heavier than is required for normal use. Under any load, the belt shall contact the center or horizontal portion of the idlers. Splices shall not cause any undue disturbance in scale operation (see N.3.).

(i l) Uniformity of Belt Loading and Flow. - The conveyor loading mechanism shall be designed to provide uniform belt loading. The distance from the loading point to the scale shall allow for adequate settling time of the material on the belt before it is weighed. Feeding mechanisms shall have a positive closing or stopping action so that material leakage does not occur. Feeders shall provide an even flow over the scale through the full range of scale operation. Sufficient impact idlers shall be provided in the conveyor under each loading point to prevent deflection of the belt during the time material is being loaded.

(j m) Belt Alignment. - The belt shall not extend beyond the edge of the idler roller in the weighing area.

9. Installation Requirements

Background: Prior to the Sector meeting, the ten sub-sections of UR.2.2.1. in the Belt-Conveyor Scale Systems code of Handbook 44 were untitled. In order to clarify the intent of each sub-section, the Sector was asked to recommend to the S&T Committee to add titles to each section.

Titles were editorially added to each section of UR.2.2.1. prior to the Sector meeting and will appear in the 1999 edition of Handbook 44. Consequently, the Sector did not discuss this item.

10. Recording Elements and Recorded Representation

Background: The Sector received a request to forward a recommendation to the NCWM S&T Committee to require belt-conveyor scale systems to record when the system enters an "alarm" for any of the following conditions: flow rate exceeds 98 percent of the rated capacity; flow rate drops below 35 percent of the rated capacity; or the zero-setting mechanism exceeds the ± 2 percent of rated capacity limit.

Discussion: The Sector acknowledged that many belt-conveyor scale installations do not have a person who watches the scale system 24 hours a day, even if the scale system is in operation during that period. Several Sector members were concerned that, if the system entered an overload, underload, or incorrect zero condition, nothing would be done to correct the error until a significant error developed.

Conclusion: The Sector agreed to forward a proposal to the S&T Committee to add a non-retroactive requirement to Handbook 44 to automatically record when a device exceeds the alarm conditions required by Handbook 44 (overload, underload, or the zero value changes by more than 2 percent of the rated capacity of the scale). Tom Ahrens (NIST), Technical Advisor, will develop language and ballot the Sector before submitting a proposal to the S&T Committee.

11. Design of Zero Setting Mechanism

Background: After the Sector finished discussing the issues printed on the agenda, Tom Vormittag (CT&E) asked the Sector to consider this item.

Handbook 44 allows belt-conveyor scales to re-zero either by an automatic or by a semi-automatic zero setting mechanism. If for some reason the zero setting mechanism malfunctions or the system is zeroed while material is on the belt, significant errors will occur. Handbook 44 requires static scales to indicate when a scale is in a out-of-balance condition; however, no such requirement exists for belt-conveyor scales. Mr. Vormittag asked the Sector to forward a recommendation to the NCWM Specifications and Tolerances (S&T) Committee to require that the value of zero is recorded before and after each transaction.

Discussion: The belt-conveyor scale manufacturers present at the meeting indicated that they could retrofit their belt-conveyor scales to record the value of zero before and after each transaction; however, none of the manufacturers offer this feature commercially. The Sector commented that recording the value of zero could be particularly useful in facilities that operate unmanned. One member pointed out that by monitoring zero maintenance and observing trends in the value of zero, problems could be identified before they become serious.

The Sector acknowledged that the potential for fraud should be reduced by monitoring the value of zero; however, the Sector was reluctant to forward a recommendation to the S&T Committee without a better understanding of the number of belt-conveyor scale installations where problems exist with the use of either an automatic or semi-automatic zero setting mechanism. It was noted that it is going to be extremely difficult finding volunteers to supply data for sites in addition to the one discussed during the Sector meeting. Since the belt-conveyor scale manufacturers would have no problem adding the ability to record zero to future belt-conveyor scale systems, the Technical Advisor suggested recommending to the S&T Committee that a non-retroactive requirement be added to Handbook 44 to require future belt-conveyor scale installations to record the value of zero. The Sector was uncomfortable with this option without looking into the costs and the benefits of such a requirement.

Conclusion: The Sector agreed that additional data is needed before it can make a recommendation to the S&T Committee on the issue of automatic zero. The Sector acknowledged that input has been requested in the past, but no one has come forward to volunteer to collect and provide data. Comments indicate that many companies may already collect this type of data as part of routine operation.

Willie Yager (NexGen/TUEO) volunteered to ask the Board of Directors of his organization to provide existing data to the Sector. Mr. Yager also offered to assist Tom Ahrens (NIST), Technical Advisor, in contacting other industry representatives for similar data. Tom will provide him with a summary of the type of data needed.

Attendance

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Appendix I

National Type Evaluation Technical Committee Measuring Sector Meeting Summary September 18-19, 1998, Albuquerque, New Mexico

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1. Update to NCWM Publication 14 to Reflect Changes to NIST Handbook 44

Background: The 83rd National Conference on Weights and Measures (NCWM) adopted the following changes that will be reflected in the 1999 edition of NIST Handbook 44 and NCWM Publication 14. These items were included as part of the agenda to inform the Measuring Sector of changes that will immediately affect National Type Evaluation Program (NTEP) policy and procedures.

A) Table S.2.2. Categories of Device and Methods of Sealing; Category 2 (LMD)

Background: The NCWM adopted several changes to Table S.2.2. Table S.2.2. lists the categories of devices and methods of sealing for liquid-measuring devices. This table now requires all liquid-measuring devices to meet the sealing requirements of either Category 1 or Category 3 after January 1, 2005.

Sector members should note that this issue will appear again on the 1999 Specifications and Tolerances Committee agenda to clarify the application of the table to existing devices.

Conclusion: Changes to Publication 14 are shown below. Text to be added to the existing Publication 14 language is underlined and text to be deleted is shown with ~~strikethrough~~.

Page 10-28, Category 2 changes:

- The physical hardware enabling access for remote communication must be on-site.
- The physical hardware must be sealable with a security seal ~~or~~
- The device must be equipped with at least two event counters (one for calibration, the second for configuration parameters)
~~- calibration parameters event counter~~
~~- configuration parameters event counter~~
- Adequate provision must be made for applying a A physical seal ~~must be applied~~ without exposing electronics.
- Event counters are non-resettable and have a capacity of at least 000 to 999.
- Event counters increment appropriately.
- Event counters may be located either:
~~- at the individual measuring device, or~~
~~- at the system controller~~
- If the counters are located at the system controller, rather than at the individual device, means must be provided to generate a hard copy of the information through an on-site device.
- An adequate number (see table below) of event counters must be available to monitor the calibration and configuration parameters of each individual device.
- The device must either:
~~- clearly indicate when it is in the remote configuration mode~~ or
~~- the device shall not operate while in the remote configuration mode.~~
- If capable of printing in the calibration mode, it must print a message that it is in the calibration mode.
- The audit trail information must be capable of being retained in memory for at least 30 days while the device is without power.
- The audit trail information must be readily accessible and easily read.
- ~~The hardware must be sealable with a security seal~~
- ~~An adequate number (see table below) of event counter(s) must be available to monitor the calibration and configuration parameters of each individual device.~~

Page 10-28, the title of the table under Category 2 changes to the following:

“Minimum Number of Counters Required for Devices Equipped with Event Counters”

Page 10-101, the text after Category 2 changes as follows:

If a device has remote configuration capability, but the activation of the remote configuration capability is through physical hardware (such as a switch) that can be sealed with a physical seal, then the device may be sealed using a physical seal ~~and~~ or the minimum form of the audit trail.

Page 10-102, the definition of Category 2 in Table S.2.2., Categories of Devices and Methods of Sealing, changes as follows:

| | |
|--|---|
| Category 2: Remote configuration capability, but access is controlled by physical hardware | [The hardware enabling access for remote communication must be on-site. The hardware must be sealed using a physical seal and <u>or</u> an event counter for calibration parameters and an event counter for configuration parameters. |
| ... | ... |

B) N.4.1. Normal Tests (LPG and Anhydrous Ammonia Liquid-Measuring Devices Code)

Background: The NCWM adopted modifications to paragraph N.4.1. The modifications were adopted to assist field officials during routine evaluations when the installation conditions and hose size do not permit a full range of flow rates.

Conclusion: In response to the changes made to NIST Handbook 44, the following note will be added to the Technical Policy Section of the Liquid-Measuring Devices Checklist:

Note: To recognize that the maximum discharge flow rate developed by the measuring system will vary with each system, NTEP will accept a maximum discharge rate developed by a system as low as 50% of the rated maximum flow rate of the device (the lower of the maximum flow rate marked on the device or the maximum flow rate to be listed on the Certificate of Conformance). Per Handbook 44, for the purposes of calculating tolerances, normal tests conducted in an NTEP evaluation may be performed at any flow rate down to:

$$[50\% \text{ of the rated maximum flow rate} + \text{the rated minimum flow rate}] / 2$$

For example: For a meter with a rated maximum flow rate of 60 gallons/minute (gpm) and a minimum flow rate of 12 gpm, the maximum discharge rate developed in an actual installation may be as low as 30 gpm. Therefore, for NTEP tests, calculate the "breakpoint" between normal and special tests as:

$$[(50\% \times 60) + 12] / 2 = 21$$

Thus, in the example, NTEP test runs at flow rates between 60 and 21 gpm are considered normal tests.

C) Table S.3.5. Categories of Device and Methods of Sealing; Category 2 (Mass Flow Meters Code)

Background: The NCWM adopted several changes to Table S.3.5. Table S.3.5. defines the categories of devices and methods of sealing for mass flow meters. This table now requires all mass flow meters to meet the sealing requirements of either Category 1 or Category 3 after January 1, 2005.

Sector members should note that this issue will appear again on the 1999 Specifications and Tolerances Committee agenda to clarify the application of the Table to existing devices.

Conclusion: Changes to NCWM Publication 14 are identical to the changes explained for agenda item 1(a) above.

D) UR.3.X. Return of Product to Storage - Compressed Natural Gas Dispensers (Mass Flow Meters Code)

Background: The NCWM modified UR.3. of NIST Handbook 44 to require CNG dispenser owners to provide a means to dispose of measured product during a field evaluation.

Conclusion: Publication 14 does not require any changes. This item was included on the agenda as an information item to ensure that Sector members are aware of the change and that manufacturers understand that they need to provide a means to return product to storage during a type evaluation test.

E) A.4. Type Evaluation (Carbon Dioxide Liquid-Measuring Devices Code)

Background: The NCWM modified A.4. of the tentative CO₂ Code to recognize to application of the tentative code for NTEP evaluations of CO₂ metering devices.

Conclusion: Publication 14 does not require any changes. This item was included as an information item to make Sector members aware that the carbon dioxide code can be applied to perform type evaluations as soon as a carbon dioxide checklist and test procedures for NTEP evaluation are complete.

2. Status of Cryogenic Liquid-Measuring Devices Checklist

Source: 1997 Measuring Sector Meeting

Background: At the Fall 1997 Sector meeting, Steve Cook (California Division of Measurement Standards) reported that the California laboratory developed a draft checklist that they use to evaluate cryogenic devices. NTEP mailed a copy of this checklist to each member of the Sector. Several members of the Sector returned the draft to Thomas Ahrens with comments. These comments were incorporated into the draft checklist.

Discussion: Thomas Ahrens (NIST) advised the Sector that he received very few comments about the proposed checklist.

Conclusion: The Sector agreed to add the checklist to Publication 14 for use in type evaluation. Presently, California is the only laboratory performing type evaluations on these devices.

3. Recognition of Unattended Devices

Source: 1997 Measuring Sector Meeting

Background: At the Fall 1997 Sector meeting, Gasoline Pump Manufacturers Association (GPMA) representatives agreed to review the Liquid-Measuring Devices checklist in Publication 14 to determine whether or not changes were needed to the checklist to address devices which are attended at certain times of the day and unattended at other times in the day. The GPMA volunteered to suggest specific changes to the checklist at this year's Sector meeting. At its 1996 meeting, the Sector agreed that the checklist criteria should apply uniformly to credit card, debit card and cash-activated devices installed at attended and unattended sites. The Sector acknowledged that the presiding weights and measures authority would decide to either accept or reject these operations.

Discussion and Conclusion: Since no proposals were provided to the Technical Advisor after the 1997 Sector meeting, the Sector agreed to make no changes to the checklist. Sector members will continue to review the Checklist for areas that need updating and forward comments to the Technical Advisor.

4. CNG EPO and Update of the Checklist

Source: 1997 Measuring Sector Meeting

Background: At the Fall 1997 Sector meeting, the Sector agreed to further refine the definitions for the minimum measured quantity (MMQ), the minimum flow rate, and the appropriate type of scale for routine and type evaluation testing of devices used to measure compressed natural gas (CNG). After the 1997 meeting, each Sector member received by mail a copy of a draft EPO which California prepared. Sector members were given an opportunity to provide comments on the EPO. Juana Williams (NIST-OWM) incorporated the recommended changes into the EPO, and the finalized draft was sent to Sector members along with a ballot to approve the EPO.

Discussion and Conclusion: Juana Williams updated the Sector on the results of the ballot. The Sector discussed several areas of the EPO that the NTEP laboratories identified as needing clarification. The Sector agreed that most of the areas required clarification. The Sector expressed its appreciation to Mike Keilty (MicroMotion, Inc.), Charlie Nelson (CA), Dan Reiswig (CA), and Juana Williams for their work on this EPO.

Mike Keilty will incorporate the following changes into the draft EPO. The Sector agreed that while Mike is updating the EPO he also had the right to make editorial changes, provided that the NTEP laboratories agreed with the changes. Mike Keilty will circulate the updated version to the NTEP labs and, after the laboratories approve the changes, Mike will forward the EPO to the A&P Committee. Mr. Keilty will ask the A&P Committee to consider including the EPO in the next edition of Publication 12.

A) Interlock Test:

Will Wothlie (MD) was concerned that, in some cases, the dispenser may remain "on" if the on/off handle stops between the "on" and "off" positions. Charlie Nelson pointed out that, in most cases, the dispenser shuts off completely if this situation occurs.

Will Wothlie will provide Mike Keilty an outline of the test procedures for the two tests related to interlock requirements.

B) Low Flow Cutoff:

The Sector generally agreed that it was usually difficult to determine when the rate of flow drops below the minimum flow rate for CNG deliveries. Consequently, the Sector agreed to remove references to the low flow cutoff test from the field test procedure, but not from type evaluation test procedures.

C) Power Loss Test:

The Sector agreed to add the statement "Note: Optional test. " to the section of the EPO referencing power loss testing. The Sector also recommended that the A&P Committee review the power loss test requirements in other EPOs and include similar language where appropriate.

D) Grounding Strap:

The Sector recognized that every CNG dispenser application is slightly different. Consequently, the required grounding technique is also slightly different. Because safety is an important part of each EPO, the Sector considered how to effectively communicate the risks related to testing CNG dispensers. The Sector agreed to include references that explain the requirement for a grounding strap. Mike Keilty and Randy Watts (Universal Epsco, Inc.) will develop and editorially incorporate appropriate wording into the EPO.

E) MMQ Test:

Members of the Sector and the Natural Gas Vehicle Coalition (NGVC) were unable to decide upon appropriate minimum test draft sizes at previous meetings.

Since the Sector could not agree upon an appropriate minimum test draft size and the MMQ test is not a routine field test, the Sector agreed to remove the MMQ test from the EPO.

F) Selection of Reference Scale:

Additional work is needed to specify criteria for the reference scale. Mike Keilty and Ross Andersen (NY) agreed to work on draft criteria. The Sector did not object to a proposed ratio of 4: 1 (as opposed to the general Handbook 44 guideline of 3: 1) for the readability and accuracy of the scale relative to the tolerance applied to the device.

G) Intrinsically Safe Equipment:

The Sector discussed the importance of using an "intrinsically safe" scale during the routine test of a CNG dispenser. The Sector agreed that either (1) the dispenser owner must provide an explosion-proof or intrinsically safe scale and associated equipment such as plugs and extension cords that meet the appropriate safety standards; or (2) the reference scale must be located at a specific minimum distance from the filling site. Fifteen feet was suggested as a possible minimum distance.

H) Number of Test Runs:

The Sector discussed the benefits of performing four different tests; these tests include runs at various flow rates and various test draft sizes. The California laboratory provided justification for performing these tests. The reasons included that the accuracy varies over the different stages of the filling process and that the tank pressure significantly affects the accuracy. The Sector agreed that the number and types of tests should remain as currently written.

I) Computer Jump:

The Sector discussed what constitutes a significant computer jump. The Sector generally agreed that as long as the computer jump does not result in a monetary difference, the jump is allowable. The Sector agreed to change the "normal test" to a "1. Special Test". The Sector agreed to add references in Publication 14 to Handbook 44 paragraphs S.2.8. and S.3.7.; add the suppression limit of 0.009 gal; change text on page 9 to read "2. Normal Test."; and format the EPO to clearly identify which procedures are actually tests.

5. Last Serial Number for Inactive Certificates

Source: Steve Malone (Nebraska)

Background: When a Certificate becomes inactive, the manufacturer has the option currently to supply NTEP with the serial number of last device manufactured. This number is listed at the back of NCWM Publication 5. In the past, if a manufacturer did not supply the serial number, the manufacturer could manufacture its product after the Certificate of Conformance (CC) became inactive and regulators would not be able to detect such action.

Discussion: The Sector discussed how the proposed amendment to Publication 14 would affect manufacturers. The Sector was interested in how remanufacturers of liquid-measuring devices could use this to their advantage. The manufacturers of devices did not reject the proposed amendment; however, they asked that NTEP accept alternative methods to identify the last device covered by an active CC.

Conclusion: The Sector noted that manufacturers often use means other than a sequential serial number to track the date of manufacture of a device. For example, many companies use a date code for the date of manufacture. The Sector supported the proposed changes to the definition of INACTIVE Certificates in principle; however, they recommend that the phrase “and/or date code” be incorporated in the recommendation. The date code information could be included in the list of last serial numbers in Publication 5. The information could also be included in new Certificates of Conformance (as requested by the manufacturer) in which case a reference to the Certificate will be made in the list of last serial numbers.

3. Inactive Status

An INACTIVE Certificate of Conformance is a Certificate which was previously active, but the devices are no longer being manufactured or re-manufactured for commercial applications. ~~However, devices already manufactured, installed, or in inventory, but not yet sold, may be used, sold, repaired, and resold under an INACTIVE Certificate of Conformance, provided that the manufacturer supplies NTEP with the serial number and/or date code of the last device of that model manufactured for commercial applications. The serial number and/or date code must be provided at the time that the manufacturer first designates the Certificate as INACTIVE. If the manufacturer chooses not to provide the last serial number and/or date code for the device model, the Certificate of Conformance will not apply to any devices of that model sold after the date that the Certificate becomes INACTIVE.~~

6. Certificates of Conformance for Computer Software

Source: NCWM Software Work Group

Background: Steve Malone, Past-Chairman to the NCWM, appointed a work group during his term as NCWM Chairman to determine whether or not NTEP should continue to issue Certificates of Conformance for software. The Software Work Group decided that, in the future, NTEP would only evaluate software as part of a metrological system.

Discussion: The Sector discussed the decisions made by the Software Work Group (SWG). Based upon the decisions, the Sector debated the best way to come up with a standard format for issuing Certificates of Conformance for software tested as part of a metrological system. The Sector discussed how the field inspector would identify the version number of the software/firmware installed within a system.

Conclusion: The Sector agreed that changes are needed in Publication 14 to standardize the terminology for software-based Certificates of Conformance (CCs). A sub-group chaired by Steve Cook and including representatives from NIST-OWM agreed to develop criteria that the Technical Advisor would distribute to the Sector with a letter ballot. The group would review the format for all measuring device CCs to identify other changes that would make the CCs more consistent and useful to field officials. The Sector recognized the need to keep the group small; however, anyone interested in participating in this work group should contact Steve Cook.

7. NTEP Evaluation of Console Controllers

Source: 1997 Measuring Sector Meeting

Background: At its 1997 meeting, the Sector agreed to revisit this issue after the NCWM Executive Committee and Software Working Group developed a recommendation for the NTEP evaluation of software.

Discussion: The Sector reviewed the benefits of type evaluating instead of simply field testing console controllers. The Sector acknowledged that some gasoline stations consider the total indicated by the console as the final sale price, regardless of the total sale indicated on the dispenser. The Sector discussed the likelihood that a console controller could change the unit price at an individual dispenser in the middle of a transaction.

Conclusion: The device manufacturers agreed to develop a discussion paper to argue why NTEP should or should not continue or stop evaluations of console controllers. This document would explain why stacked sales, price changes and credit/debit do not metrologically affect the console controller. Manufacturers agreed to present the discussion paper at the next Sector meeting.

8. Year 2000 Date Problem

Source: Dennis A. Krueger (NCR)

Background: Many devices that require a date to function may fail to operate correctly when we enter the 21st Century. Some devices, which use a 2-digit date code, may incorrectly recognize 00 as the year 1900, instead of the year 2000. NTEP devices that might malfunction are those that contain functions such as an electronic audit trail.

Discussion: The Sector discussed the costs and associated benefits of performing year 2000 (Y2K) compliance testing. One manufacturer asked the Sector to consider alternatives to device testing to verify that a device will operate correctly into the 21st Century, for example, providing a certificate from an independent party that verifies compliance. The Sector quickly reviewed the Canadian Y2K test procedure.

Conclusion: The Sector agreed that the NTEP laboratories may perform additional tests, as appropriate, to determine that a device will comply with all Handbook 44 requirements after December 31, 1999. The Sector also agreed that the Measurement Canada test procedure may be applied during an NTEP evaluation.

9. Appropriate Abbreviations and Symbols to Identify Equipment

Source: Ronald Murdock (North Carolina)

Background: General Code paragraph G-S.1. of Handbook 44 requires that measuring equipment be identified with the following information:

- (a) the name, initials, or trademark of the manufacturer or distributor
- (b) a model designation that positively identifies the pattern or design of the device
- (c) except for equipment with no moving or electronic component parts, a nonrepetitive serial number and
- (d) the serial number prefaced by words, an abbreviation, or a symbol, that clearly identifies the number as the required serial number.

No guidelines are provided to specify appropriate symbols, abbreviations, and designations to identify liquid-measuring devices. Of particular concern was whether prefacing the serial number with “NO.” is sufficient to identify the serial number as required by G-S.1.(d).

Discussion: The Sector discussed the S&T Committee’s original intent in requiring a symbol or prefix to identify the serial number. The language had been added to eliminate confusion. The Sector recognized that Underwriters Laboratory Inc. (and possibly other organizations) supports the use of “NO.” to identify the serial number. Will

Wothlie (MD) pointed out that as long as NTEP does not require a serial number on each meter, the value of the serial number on a dispenser is limited, particularly on dispensers which house multiple meters. The Sector discussed the possibility of establishing specific abbreviations and terminology for designating the serial number on a device and including them in Publication 14.

Conclusion: The Sector could not reach a consensus to include specific terminology in Publication 14. The Sector agreed to submit a proposal to the S&T Committee asking them to review what constitutes acceptable and unacceptable designations to identify serial numbers. Comments indicated that the S&T Committee should also review G-S.1. to determine whether or not changes are needed to section (b) addressing the model designation to mirror the language in section (d) for serial number. In the interim, the Sector asked the laboratories to continue to work together to establish guidelines for consistently applying this criteria.

10. Identification of Repaired, Reconditioned and Remanufactured Equipment

Source: Gasoline Pump Manufacturer's Association

Background: At the 1998 NCWM Annual Meeting, the Scale Manufacturers Association (SMA) and the Gasoline Pump Manufacturers Association (GPMA) requested additional time from the NCWM Specifications and Tolerances (S&T) Committee to develop the definitions for devices that are repaired or modified after the original manufacturer sells the device. The S&T Committee agreed to retain the issue of repaired and remanufactured equipment on its agenda, provided that industry developed proposed language by the 1999 NCWM Interim Meeting. The Sector reviewed this issue as an informational item.

Discussion: Representatives of the GPMA advised the Sector that the GPMA and SMA are continuing to develop wording for the S&T Committee. The GPMA acknowledged the January 1999 deadline to finalize the proposed wording. The Sector did not provide any recommendations to the S&T Committee or the GPMA.

Conclusion: Since there has been no action by the NCWM on this issue, the Sector agreed to postpone discussing it until the NCWM reaches a decision that will impact type evaluation. The Sector agreed to remove this item from its agenda until the NCWM makes specific recommendations that the Sector needs to discuss. The Sector acknowledged that there is an existing policy in the Administrative Procedure and Policy Section of Publication 14 which addresses remanufactured equipment; NTEP will continue to apply the existing policy until the NCWM changes it.

11. Tolerances for Devices Delivering Less Than One Gallon

Source: Mike Belue (Belue Associates) and 1998 NCWM S&T Agenda

Background: The 1998 NCWM S&T Committee agenda included an informational item to consider adding the following paragraph to Handbook 44 to address retail liquid-measuring devices that deliver small quantities of a product:

T.2.1.X. Tolerances For Devices Delivering Less Than One Gallon-Maintenance tolerances and acceptance tolerances shall be as shown in Table 2. Tolerances for Slow-Flow Meters.

The Measuring Sector reviewed this item to develop recommendations for the S&T Committee to consider when the Committee revisited this item in 1999.

Discussion and Conclusion: The Sector agreed with the technical content of the proposal; however, it also agreed that the wording of the proposal could promote confusion. The Sector recognized that some liquid measuring devices, most notably retail motor-fuel dispensers, periodically deliver less than one gallon. The Sector agreed that the tolerances for slow flow meters are not appropriate for these devices. To eliminate the potential for confusion, the Sector recommended that the S&T Committee retitle the proposed paragraph as "Tolerances For Devices Designed For Normal Deliveries Of Less Than One Gallon" and put the item forward to the NCWM as a voting item.

12. Vapor Recovery System Testing

Source: Steve Cook (California Division of Measurement Standards)

Background: While updating its EPO for liquid measuring devices to include test criteria for devices equipped with vapor recovery equipment, the California Division of Measurement Standards found that certain systems where each side of the dispenser is a separate system experienced problems. California recommended that the Sector consider adding the following language to Publication 14 to identify systems where the vapor recovery system affects the performance of the dispenser.

X.X. Turn the dispenser on (start up). Before dispensing, check the following:

X.X.1. "Computer Jump." If the volume and/or money values advance, then stop, and shut the dispenser off. You may want to consider enforcement action based on your experience and comparison to the initial "start up" condition of other dispensers in the same location.

X.X.2. Dispensers that can be used simultaneously on both sides by different users and dispensers with coaxial hose systems (balance and bootless nozzles), should be checked for internal leakage of valves, piping, seals between liquid and vapor spaces, or inner and outer hoses. After turning the dispenser on, observe the volume and money indications on both sides of the dispenser for advancement (even if the opposite side uses a different hose). Advancement of indications on either side of the dispenser indicates a possible leak and diversion of measured product. Mark the device "out of order" if this condition occurs.

Discussion: Initially, there was some question about whether or not this issue should be addressed in Publication 14. The Sector acknowledged that NTEP does not test the effectiveness of vapor recovery systems; however, NTEP would test the performance of a system equipped with a vapor recovery system to determine if the nozzle affects the performance of the system. The Maryland laboratory pointed out that the proposed test for computer jump conflicts with current policy. Maryland recommended continuing the practice of only rejecting a device if a monetary advance occurs, regardless of changes to the indication in volume. Several manufacturers commented that a time limit should be set for watching for computer jump, possibly 4 to 6 minutes.

Conclusion: The Sector agreed that the NCWM A&P Committee should consider the proposed language when they revise retail motor-fuel dispenser EPOs. The Sector agreed to forward comments to the A&P Committee. When this item is forwarded to the A&P Committee, a note should accompany the recommendation that reflects the Sector decision in agenda item 4, part 9, that states that computer jump is allowable only if no change in monetary value is experienced.

13. Minimum Resolution

Source: Richard Suiter (NIST-OWM)

Background: In the process of working with Canada to develop a mutual recognition program for liquid-measuring devices, NTEP and Measurement Canada noted a difference in requirements for price computations. Canada currently requires that total price computations be based upon quantities no greater than 0.001 gallon or 0.01 liter. This conflicts with Handbook 44 requirements. The Sector addressed this item to determine if it should send a recommendation to the S&T Committee to modify S.1.6.5.2. in an effort to harmonize Handbook 44 with Canada's existing policy and, thus, facilitate NTEP testing by Canada. The proposed changes are as follows:

S.1.6.5.2. Money-Value Divisions, Digital.-A computing type device with digital indications shall comply with the requirements of paragraph G-S.5.5. Money Values, Mathematical Agreement, and the total price

computation shall be based on quantities not exceeding 0.05 0.01 L for devices indicating in metric units and 0.01 0.001-gal. intervals for devices indicating in inch-pound units.

Discussion: NIST-OWM informed the Sector that Canada would soon begin testing retail motor-fuel dispensers for NTEP. The Sector acknowledged that modifying S.1.6.5.2. to agree with Canada's requirements would reduce the time required for Canada to perform tests for NTEP. None of the device manufacturers represented at the meeting believed that the proposed changes would create difficulties for their company; however, they were reluctant to provide an official position until they checked back with their respective companies. The Sector categorized this as a non-critical housekeeping issue. Consequently, the Sector did not see an urgency to act on this issue.

Conclusion: Since several Sector members needed to do more research on the potential effects of the proposed amendments, the Sector postponed forwarding a proposal to the S&T Committee. Sector members agreed to review the issue within their organizations and provide feedback to Dick Suiter or Tom Ahrens prior to the 1999 NCWM Interim Meeting.

14. Width of Index on Indicator

Source: Richard Suiter (NIST-OWM)

Background: In the process of working with Canada to develop a mutual recognition program for liquid-measuring devices, NTEP and Measurement Canada noted a difference in requirements for indicators and graduations. Canada requires that the index of an indicator is no wider than the narrowest graduation. The reciprocal requirement in Handbook 44 states that "the index of an indicator shall not be wider than the width of the *widest* graduation." In an effort to harmonize the Handbook 44 code for liquid-measuring devices with Canada's code for liquid measuring devices, the Sector was asked to consider suggesting that the S&T Committee modify S.1.5.3. (a) as follows:

(a) The index of an indicator shall not be wider than the width of the widest-narrowest graduation.

Discussion: The Sector determined that this issue will not affect most devices manufactured today. One manufacturer that still builds mechanical registers for commercial measuring devices is the Veeder-Root Company, and the Sector did not believe that their equipment would be significantly impacted.

Conclusion: The Sector agreed to forward following proposed change to paragraph S.1.5.3.(a).

(a) The index of an indicator shall not be wider than the width of the widest narrowest graduation.

Manufacturers are encouraged to forward comments on this issue to the S&T Committee.

15. Power Failure Requirements

Source: Richard Suiter (NIST-OWM)

Background: Publication 14 requires that audit trail information be retained for at least 30 days if power is removed from a device. The reciprocal Canadian requirement requires that this information be retained for at least 7 days. The Sector addressed this item to determine if, in an effort to harmonize NTEP policy with Canada's policy for liquid-measuring devices, the 30-day requirement should be reduced to 7-days.

Discussion: The Sector acknowledged that Publication 14 specifies that audit trail information must remain in non-volatile memory for at least 30 days in the event of a power failure. Comments indicated that manufacturers usually design devices to store information for much longer than 30 days. The Sector also noted that, when the Sector developed the current power failure criteria for audit trail information, NTEP did not routinely perform power-failure testing to verify compliance with the criteria; rather, the manufacturer provided information to NTEP to demonstrate compliance with the criteria.

Conclusion: The Sector agreed that, although NTEP testing does not routinely require testing to verify compliance with this criteria, if a laboratory seeks to have a device type evaluated for recognition by both NTEP and Measurement Canada, a 7-day test may be performed.

16. Testing Requirements for Credit Card Readers Installed in Retail Motor-Fuel Dispensers

Source: Richard Suiter (NIST-OWM)

Background: NTEP management was asked to clarify the authorization procedure for retail motor-fuel dispensers equipped with card readers. The concern that prompted the question was that customers were found driving off from gasoline pumps without paying; these customers thought that they paid for their gas using a credit/debit card after inadvertently canceling their credit card transaction prior to dispensing product, thereby authorizing a cash sale.

Discussion and Conclusion: After discussing the concern, the Sector decided that NTEP testing can not prevent the stated problem. Consequently, no changes are required to Publication 14 to address credit card readers installed in retail motor-fuel dispensers.

17. Mass Flow Meter Test Procedures

Source: Thomas Ahrens (NIST-OWM)

Background: NTEP management periodically receives complaints that the checklist for mass flow meters is confusing. These complaints often originate when a manufacturer does not agree with the NTEP laboratory interpretation of a portion of the checklist during the type evaluation of their mass flow meter. The Sector was asked to establish a plan to clarify the checklist to assure manufacturers that the NTEP laboratories apply uniform test criteria to each mass flow meter tested.

Discussion and Conclusion: The Sector agreed that the mass flow meter checklist is confusing and does not address every test that NTEP may perform (i.e. vehicle-tank meter tests). The Sector appointed a workgroup to review the liquid-measuring device checklist to identify sections that need revisions. The workgroup consists of Andre Noel (Schlumberger), chairman; Wade Mattar (Foxboro); and Thomas Ahrens (NIST). Will Wotthlie (MD) and Ron Murdock (NC) will provide assistance to the workgroup, if necessary. By the 1999 NCWM Interim Meeting, the workgroup agreed to develop specific goals and deadlines for accomplishing the revisions. The workgroup will recommend changes to the Sector at its next meeting. While reviewing the checklist, the workgroup will also list changes for Handbook 44 that they will forward to the S&T Committee after allowing the Sector to review the recommendations.

18. Adding Volume Measurement to Existing Mass Flow Meter Certificates

Source: 1997 NCWM Specification and Tolerances Committee Agenda

Background: In 1997, the NCWM voted to allow mass flow meters to indicate in either mass or volume units of measurement. At its 1997 meeting, the Sector agreed that NTEP Certificates of Conformance (CC) could cover mass flow meter applications with mass and volume modes of indication; however, the mass flow meter must be tested while indicating in each mode. On November 10, 1997, Thomas Ahrens (NIST-OWM), technical advisor, sent each Sector member a ballot to exempt mass flow meters from a follow-up test to add volume units to an active mass flow meter CC which only covers mass units of measurement. The Sector approved the ballot. A second ballot went out on February 20, 1998. This ballot asked the Sector to consider three issues:

- 1) Which products does NTEP have to test to add volume units to a mass flow meter CC?
- 2) Which meter sizes does NTEP have to test to add volume units to a mass flow meter CC?
- 3) Is gravimetric testing appropriate to add volume units to a mass flow meter CC?

The Sector did not approve any of the issues on the second ballot. Consequently, the Sector decided that they needed to clarify the amount of testing that NTEP performs to cover both mass and volume units on a mass flow meter CC.

Discussion: The Sector recognized that a poor number of responses were received on the second ballot sent to the Sector. The technical advisor reported to the Sector that based upon the number of abstentions and the comments received with the second ballot, it appears that many Sector members do not fully understand the Coriolis mass flow meter technology, nor the issues on the ballots. The Sector indicated that two issues should be clarified before they could make additional decisions:

- 1) Written test procedures are needed to perform volume tests with mass flow meters.
- 2) Appropriate methods for determining the density of the product metered during the test must be determined.

Conclusion: The NTEP laboratory must test a mass flow meter (MFM) with products as outlined in the family of products table to include volume units of measurement on a mass flow meter CC. This policy applies regardless of whether or not the meter is covered by an existing CC for mass units. This policy would result in re-testing the meter in the volume mode with products that were previously tested with the meter in the mass mode.

Testing to add volumetric units to a MFM CC can be done volumetrically using volumetric test procedures used for other volumetric meters or gravimetrically using gravimetric test procedures outlined in Publication 14 and the minimum test criteria (kinds and number of tests) outlined for mass flow meters. The method used to determine density for gravimetric tests will be reviewed by NTEP on a case-by-case basis to allow the manufacturer flexibility in determining density for various product types and applications. Testing will not result in an approval of the density indication feature on the CC. (Note: Each test will consist of only an initial test, and will not include a subsequent test. Comments were also received indicating that, due to the complexity of the issues and the confusion among Sector members, the issues should be discussed at the next Sector meeting rather than attempting to resolve the issues by letter ballot. To add volume units, the test of only one meter size is required to cover the whole family of meter sizes listed on the original CC.)

The technical advisor agreed to document test procedures to test mass flow meters volumetrically using the existing Examination Procedure Outlines as a template. The following people volunteered to review the procedures prior to submitting them to the Sector for review: Andre Noel (Schlumberger), Mike Keilty (Micro Motion), Bob Traettino (Liquid Controls), Ken Hoffer (Hoffer Flow Controls), Wade Mattar (Foxboro), Will Wotthlie (MD), Steve Cook (CA), and Debbie Joines (Dresser-Wayne).

19. Correcting Existing Mass Flow Meter Certificates

Source: Thomas Ahrens (NIST-OWM)

Background: Several of the existing mass flow meter Certificates of Conformance (CC) were issued using ad hoc test requirements. Based upon these ad hoc test requirements, several companies received more products and meter applications on their CCs than the current mass flow meter checklist would allow. In order to create a level playing field for the mass flow meter manufacturers, NTEP management decided to update and reissue all of the existing mass flow meter CCs to satisfy the current NTEP requirements. NTEP will provide several options for manufacturers to retain products and applications on their Certificate(s) of Conformance.

This issue was included on the agenda as an information item; however, the Sector was invited to comment on the issue of how to correct inconsistencies on existing mass flow meter Certificates of Conformance.

Discussion: Four of the five manufacturers that held CCs for mass flow meters were present at the meeting. Several Sector members requested that the NIST-OWM reconsider its decision to update existing CCs. One manufacturer argued that NTEP should not expand CCs to cover products and applications that NTEP has not tested. The opposing argument was that removing products and applications from existing CC(s) would impose an unfair burden on manufacturers. The Sector discussed whether or not NTEP should consider weights and measures data collected during routine field evaluations to include vehicle-tank meter applications or additional meter sizes on a mass flow meter CC.

One manufacturer asked NIST-OWM to consider accepting test data collected in Canada. The Sector finished the discussion by taking an informal vote to provide NIST-OWM with feedback on how the Sector believes the CCs should be updated. The two approaches voted on were: (1) the approach outlined in a September 16 letter from Thomas Ahrens to holders of mass flow meter CCs and State Directors, which permits manufacturers to supply test data to update their CC; and (2) the approach of revising each CC based on NTEP testing already performed on the device to reflect criteria adopted by the Sector. The results of the informal vote were as follows:

Approach 1: Allow addition test information as outlined in the September 16 letter:

For: 7 Against: 6

Approach 2: Do not allow additional data. Issue CCs based upon previous NTEP tests:

For: 8 Against: 6

Conclusion: The Sector did not reach a consensus on a single approach to update the CCs. NTEP management agreed to consider the comments in working to correct the inconsistencies among the existing mass flow meter CCs. NTEP management also agreed to notify CC holders of the approach to be used and whether or not there would be changes to the original approach outlined in the September 16 letter. NTEP appreciates the Sector's time in reviewing the issue.

20. Family of Products Table for Mass Flow Meters

Source: Andre Noel (Schlumberger)

Background: At its 1997 meeting, the Sector agreed to apply the Family of Products Table for Positive Displacement Meters to mass flow meter evaluations until a better family of products table was developed. Andre Noel submitted a proposal to the Sector to consider a redesigned table that he believed better identified the significant parameters of Coriolis mass flow meters. The table organized the liquids measured by mass flow meters into five classifications: Alcohols/Glycols/Water/Water Mixes thereof; Compressed Gases (Liquefied); Agricultural Liquids (Fertilizers and Chemicals); Petroleum Products/Solvents/Herbicides; and Agricultural Liquids (Fertilizer Suspensions and Herbicide Flowables).

Discussion: Andre Noel presented his table to the Sector. The Sector reviewed the table and commented that the table needed revisions. Measurement Canada noted that they have collected mass flow meter test data for twelve years. Canada's tests indicate that temperature, pressure, and specific gravity are more significant factors with respect to meter performance than product classification. Based upon this information, the Sector produced a revised table based upon the normal temperature, pressure, and specific gravity of the product as it is delivered. The Sector developed the following classifications for products metered with direct mass flow meters: normal liquids, compressed gases, compressed liquids, cryogenic liquids, and heated liquids. The Sector agreed that specific mass flow meter tolerances are needed for heated products.

Conclusion: Add the following to the Technical Policy Section of Publication 14 for Liquid-Measuring Devices.

When submitting a direct mass flow meter for evaluation, the manufacturer must specify the product or product group for which the meter is being submitted. To cover a product group, NTEP tests must be conducted with two liquids from each product group. Upon successful completion, a range of specific gravities between the specific gravities of the two liquids used from the product group will be covered on the Certificate of Conformance (CC). The specific gravity range within the product group can be expanded by conducting an NTEP test with a liquid of higher or lower specific gravity than is covered on the existing CC.

The above does not apply to the following product groups: compressed gases, compressed liquids, and cryogenic liquids. In the case of these product groups, only one liquid within each group is required to undergo an NTEP evaluation and, upon completion, the entire product group will be covered on the existing CC.

Multi-product applications (that is, applications in which the meter will be used without a change to zero or calibration to dispense different products which vary in specific gravity by more than 0.1 must include a multi-product test. The multi-product test will be performed on the meter without a change to zero or calibration using multiple products having a difference in specific gravity of at least 0.2. For devices which will be used to dispense multiple products having a specific gravity range greater than 0.2, the multi-product testing must be performed over the anticipated range before multi-product applications will be included on the CC. For the multi-product testing, throughput testing will be performed on one or a combination of the products; testing for the subsequent test will be conducted on both products. Multi-product testing requirements do not apply to meters used to dispense a product such as propane in which the density varies in normal operation.

The Sector agreed that specific tolerances are needed in the Mass Flow Meters Code for heated product applications. The Sector commented that it may also be appropriate for the S&T Committee to consider revising the tolerances for other meter technologies used to measure heated products. Consequently, the Sector agreed to delay further NTEP testing of mass flow meters delivering heated products until the S&T Committee revises Handbook 44. *Editors Note: This decision does not preclude weights and measures jurisdictions from regulating mass flow meters dispensing heated products. Jurisdictions may wish to perform their own type evaluation testing using existing requirements in the liquid-measuring device and mass flow meter codes until such time that NTEP resumes testing of mass flow meters with these products.*

The Sector approved the following family of products table for direct (as opposed to inferred) mass flow meters.

| Direct Mass Flow Product Group Table | | | |
|--|--|------------------|--|
| Product Groups | Typical Products | Specific Gravity | Minimum Test Requirements to Cover Entire Group* |
| Normal Liquids | Water, Alcohols, Glycols, Water Mixes thereof, Agricultural Liquids, Fertilizers, Chemicals, Petroleum Solvents, Herbicides, and Suspensions | 0.7 to 2.5 | Test with one liquid having a specific gravity of 0.7 Test with one liquid having a specific gravity of 2.5 |
| Compressed Liquids | Propane, Butane, Freon 11, Freon 12, Freon 22, NH ₃ , etc. | 0.5 to 0.68 | Test with one product having a specific gravity at any point within the range 0.5 to 0.68 |
| Compressed Gases | CNG | 0.6 to 0.8 | Test with one product having a specific gravity at any point within the range 0.6 to 0.8 |
| Cryogenic Liquids (BP 152 °C) and Liquid Natural Gas | Liquefied Oxygen, Nitrogen, etc. | 0.7 to 1.4 | Test with one liquid having a specific gravity at any point within the range 0.7 to 1.4. |
| Heated Products (above 50 °C)** | Bunker C, Asphalt, etc. | 0.8 to 1.2 | Test with one liquid having a specific gravity of 0.8 Test with one liquid having a specific gravity of 1.2 |

* If only a single product is selected for test, the resulting CC will cover only that product.

The manufacturer may select liquids having a *narrower* range than that specified in the subgroup; in this case, the CC will be limited to subgroup products falling within the narrower specific gravity range.

The manufacturer may select liquids having a *wider* range than that specified in the subgroup; in this case, the CC will cover subgroup products over the wider specific gravity range.

** NTEP does not presently evaluate heated products.

Note: This table is not intended to be limiting nor all inclusive; manufacturers may select products not reflected in the table. Such products will be addressed on a case-by-case basis and will result in expansion of subgroup ranges as appropriate.

21. Maximum Flow Rate Covered on Certificates

Source: Andre Noel (Schlumberger)

Background: The Sector was asked to consider modifying Paragraph D of the Publication 14 Liquid Measuring Device Technical Policy as follows:

D. Flow Rates Listed on Certificates of Conformance

...

~~If that same size of meter has already been selected and tested on some product (e. g. water), then another test of that size of the meter selected for testing is already covered on a Certificate of Conformance the meter would have to either meet 80 percent of the maximum flow rate marked on the meter or 80 percent of the maximum flow rate for the installation.~~

Discussion: The Sector questioned the intent of this change. Mr. Noel explained that his understanding of Section D is that meters covered on a Certificate of Conformance (CC), whether or not that meter size was tested, only have to meet the 80 percent of the maximum flow rate marked on the meter or 80 percent of the maximum flow rate for the installation for an NTEP test.

Conclusion: The Sector agreed to delete sections D and E of the Technical Policy Section of the Liquid-Measuring Devices Checklist in the 1998 version of Publication 14 and replace them with the following:

D. Meter Sizes and Flow Rates to be Included on a Certificate of Conformance

If there are more than three meter sizes in a family, to cover a family of meters on a Certificate of Conformance, the largest and smallest meters in the family shall be submitted for type evaluation. It is suggested that these meters represent the meter with the lowest minimum rated flow and the meter with the highest rated flow. Depending upon the range of flow rates between the largest and smallest meters, additional meters may be required to be submitted for testing.

Based upon the test of a meter (or meters) of only one size, meters one size larger and one size smaller than the meter that is tested and meeting the following criteria may be covered by the Certificate:

1. Meter sizes with rated maximum flow rates of 50 percent to 200 percent of the rated maximum flow rate of the meter tested;
2. Meter sizes with rated minimum flow rates of 50 percent to 200 percent of the rated minimum flow rate of the meter tested.

The maximum flow rate achieved in an installation is considered to be 80 percent of the maximum flow rate to be listed on the Certificate of Conformance.

E. Installations Selected for Type Evaluation:

Site requirements for tests to add new products and/or sizes to an existing CC:

1. For tests of a meter size not previously covered on the CC (through testing or through the guidelines outlined for meter sizes above), the installation selected for test must achieve at least 80 percent of the meter's rated maximum flow rate.
2. If the size of meter selected for test was previously tested under the CC with another product, then there are no minimum requirements with respect to the flow rates to be achieved in the installation selected for testing.

3. If the size of meter selected for test was covered based on the guidelines outlined for meter sizes not previously tested under the CC with another product, then the installation selected for test must achieve at least 40 percent of the meter's rated maximum flow rate; otherwise, the site is inappropriate for type evaluation.

22. Compatibility of Electronic Devices

Source: Andre Noel (Schlumberger)

Background: Andre Noel submitted a proposal to the Sector that recommended that NTEP discontinue testing the compatibility of NTEP devices that are interfaced together in a measuring system. The proposal argued that if devices do not communicate properly with each other, the local jurisdiction would find the problem immediately when they test the system.

Discussion: Tina Butcher (NIST-OWM) provided the example of a retail motor-fuel dispenser that is interfaced with a console. After the dispenser is tested in a system that includes a console, the owner may interface the dispenser with any approved and compatible console. The Field Evaluation and Permanance Tests for Metering Systems at the end of the LMD Checklist in Publication 14 require that devices such as consoles be tested as part of a measuring system. Andre began to describe his situation with the help of several of the NTEP laboratories. Since his particular situation is proprietary in nature, Andre was unable to share specific information. Other manufacturers objected to making changes to the policy that they were required to follow, noting that a significant investment of time and money was required to complete testing. They contended that their systems were very similar to the system Andre described.

Conclusion: The Sector was unable to fully discuss this item because the submitter was reluctant to discuss proprietary information that initiated the agenda item. Consequently, the Sector did not reach a consensus on the proposal. The Sector agreed that the current permanence test criteria included in Publication 14 are appropriate. The Sector also noted that many manufacturers have been required to complete the 30-day permanence tests as outlined in the example presented, and such tests are typically not that expensive.

23. Special Test Requirements for Vehicle Mounted Mass Flow Meter Installations

Source: Andre Noel (Schlumberger)

Background: Since Publication 14 does not currently include specific test criteria for vehicle mounted mass flow meters, it was suggested that NTEP needs to develop specific test criteria so that manufacturers could have vehicle mounted applications included on their Certificates of Conformance (CC).

Discussion and Conclusion: The Sector was unable to discuss this issue due to a lack of time. During discussion of Agenda Item 17, it was noted that the workgroup established to review the mass flow meter checklist in Publication 14 should consider this item in its review.

| National Type Evaluation Technical Committee -- Measuring Sector September 18-19, 1998 Albuquerque, NM Attendance List | | | |
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Appendix J

National Type Evaluation Technical Committee Weighing Sector Summary October 6-7, 1998, Sacramento, CA

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Meeting Summary

Carry-Over Items

1) Criteria for Modular Scales

Source: NTEP Labs

Background: At its last meeting, the Weighing Sector agreed to ask the Scale Manufacturers Association's (SMA) Technical Committee to review this item and submit a proposal for changes to Publication 14 relative to modular scales. The Sector specifically asked if SMA could review the current policy for parameters to be covered on a modular scale Certificate of Conformance (CC) based on the model tested. The Sector is asked to consider the resulting proposal developed by the SMA Technical Committee as outlined in Appendix A. The Sector was also asked to review the issue of whether or not a permanence test should be required to expand existing modular scale CCs to include additional capacities and sizes.

Discussion: Darrell Flocken (Mettler-Toledo) reviewed the background for the issue and introduced the proposal found in Appendix A. Darrell stated that, although the document has been reviewed by some of the members, the document should not be considered an SMA position because it had not been reviewed by the entire SMA membership. The proposal was presented for consideration on its own merit. The Sector reviewed the basic types of modular scale designs, which were approved at the last meeting. There was general agreement that the intent of the modular criteria was to allow longer scales to be produced by a manufacturer without requiring re-evaluation provided that the appropriate load cell parameters were met. There also was discussion of possibly eliminating the lower length limit of 50% of the shortest module tested. The majority of the Sector favored keeping the lower limit in place.

Conclusion: The Sector agreed to modify the NTEP Technical Policy for Scales Section B, Part 6, Pub 14 page 1-11 modular vehicle scale criteria as follows:

6 (a): No change.

6 (b): No change

6 (c): Modify the section as follows:

c. A scale with at least two modules must be tested. The module with the largest CLC is to be tested. ~~Strive to test the module with the longest distance between two sections.~~ If the longest span between sections is not tested, the Certificate of Conformance will include up to 120 percent of the span between sections that was tested. Arrangements regarding the specific scale in the family to be tested will be established in consultation with NTEP representatives.

6 second Part (b): Modify the section as follows:

b. Platform area not less than 50 percent of the smallest two-section (four-cell) module incorporated in the device evaluated to 150 percent of the scale longest module evaluated.

Increased platform areas and lengths for scales with two or more modules are not restricted as long as the width complies with 6(e) and the load cells meet the v_{min} formula; (i.e., $v_{min} = d / 6n$). Additional modules to increase length must be of the same type as those used in the device submitted for evaluation (i.e., 4 - cell, 2-cell, 0 - cell.)

6 second Part (c): Modify the section as follows:

c. CLC's complying with the minimum CLC rating (i.e., not less than 80 percent of the capacity of one cell) to 5 tons above device evaluated, but not exceeding twice the capacity of one load cell.

6 second (d) through (h): No change

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The Sector also agreed to modify the non-modular vehicle scale criteria as follows:

Part 5(f): Eliminate the 5-ton allowance above the CLC tested as follows:

f. concentrated load capacities (CLC) of 50 percent of the CLC of the device tested to ~~a the maximum of 5 ton higher (for optional higher capacities of devices); however, the manufacturer must provide evidence that the scale with the higher CLC has been structurally strengthened to accommodate the higher loading concentration; in addition the scale that is tested is limited to the CLC rating that applies at the time of the test~~ CLC evaluated; the minimum CLC rating shall not be less than 80 percent of the capacity of one cell but not exceeding twice the capacity of one load cell (the dead load of the weighbridge must be considered);

The Sector discussed eliminating the lower (50%) restriction on length for non-modular vehicle scales; however, it could not reach a consensus on this proposed change. The Sector also considered making modifications to other non-modular vehicle scale criteria; however, it agreed that it would be better to bring this back as a separate issue for discussion at a future meeting.

The Sector agreed that manufacturers can request to have their CCs expanded under the new criteria. The elimination of the 5 ton allowance for CLC (under part 5[f] and part 6 second [c]) will not be applied retroactively, but will be applied to new CCs and to requests to modify the CLC beyond that originally listed on the CC.

The Sector discussed a proposal to waive permanence testing on evaluations performed to expand CCs beyond the lengths listed on the original CC. However, in view of changes made by the Sector to expand the criteria, the Sector did not feel that this proposal was still appropriate. Consequently, any testing performed to expand the CC beyond its original platform size or capacity will require a full permanence test.

2) Double-Wide and Narrow Decks

Source: NTEP Labs

Background: At its last meeting, the Weighing Sector requested that the Scale Manufacturers Association's (SMA) Technical Committee could review the subject of whether or not two vehicle scales, with a Certificate of Conformance, placed side-by-side to create a system for weighing vehicles wider than 10 feet required additional NTEP testing to be covered by the Certificate, if so the committee was asked to submit a test requirements proposal for Sector consideration. If so, the Sector was asked to consider that proposal as outlined in the attached document. (See Appendix B)

Discussion: The Sector reviewed the proposal developed by Steve Langford (Cardinal Detecto) for testing side-by-side vehicle scales installed to provide a "double-wide" scale. It was pointed out that the Sector had discussed this issue several years ago and at that time the Sector's position was that NTEP should not address vehicle scales with capacities greater than 200 000 lb. The Sector felt that those devices were most typically used in non-commercial applications weighing off-road vehicles, and NTEP did not have sufficient resources to justify NTEP evaluations of the relatively few in commercial applications. It was more cost effective for the states where those few were installed to conduct their own evaluation. The situation has now changed and some devices are being used in commercial applications where large vehicles are being weighed to determine charges as well as being used for non-commercial weighing. The design and number of these devices installed make it inappropriate to classify them as "one of a kind." Darrel Flocken (Mettler-Toledo) volunteered to have a system, which they have installed in Ohio, to be used to develop appropriate test criteria. Mettler-Toledo will work with Jim Truex (Ohio) and NTEP using the proposed guideline as a starting point and will report to NTEP and the Sector with any problems that need to be addressed in the future.

Conclusion: The Sector agreed that the labs should use the procedures in Appendix B on an *ad hoc* basis. The labs can continue to make recommendations for developing additional procedures. The Sector will readdress this issue next year, if necessary, based upon feedback from the Ohio laboratory and Sector members.

3) Combination Vehicle/Railway Track Scales

Source: NTEP Labs

Background: Vehicle scales and railway track scales have different marking requirements in NIST Handbook 44. They also have different NTEP test requirements stipulated in NCWM Publication 14. At it's last meeting the Weighing Sector requested that the Scale Manufacturers Association's (SMA) Technical Committee review the marking requirements for combination vehicle/railway track scale and submit a proposal for Sector consideration. The Sector is asked to consider that proposal as outlined in Appendix C.

Discussion: The Sector reviewed the proposal from Steve Langford (Cardinal Detecto). There was general agreement that the problem is not with the actual value of the Concentrated Load Capacity (CLC) declared by the manufacturer for these combination scales. If the scale is designed for weighing rail cars in common use today, it will certainly have sufficient strength to support a reasonably high CLC. The Sector agreed that the real problem is the marking requirements of NIST Handbook 44 when a device is used for weighing both rail cars and highway vehicles. Handbook 44 requires a railway track scales to be marked with a sectional capacity. The sectional capacity is designated by the manufacturer and must be of a greater capacity than the weight of one end of the railcars passing over the scale. There is no requirement for testing, during type evaluation, to any fixed percentage of sectional capacity. Handbook 44 requires a vehicle scale to be marked with a CLC, which is also designated by the manufacturer. The CLC must be sufficient to handle the heaviest axle weights for the vehicles passing over the scale. The type evaluation checklist for vehicle scales requires testing to at least 90 percent of the designated CLC with known test standards. Vehicle scales must also be tested to at least 90 percent of nominal capacity using a combination of known test standards and strain load procedures. Some manufactures have indicated on combination vehicle/railway track scales that the value of the CLC and the sectional capacity are the same. For example; a combination vehicle/railway track scale may have a nominal capacity greater than 500 000 lb. The section capacity/CLC designated by the manufacturer may be 300 000 lb or greater. Most combination vehicle/railway track scales are tested by U.S. Department of Agriculture (USDA) Grain Inspection Packers and Stockyard Administration (GIPSA). With the present GIPSA test equipment, it is nearly impossible to test to 90 percent of a 300 000 lb CLC with known test standards. A CLC of 300 000 lb for vehicle normal highway vehicles is not meaningful, since highway dual axle load limits for these vehicles are only about one eighth of that amount.

Conclusion: The Sector agreed that an applicant for a CC for a combination vehicle/railroad track scale must state on the application and mark on the device (1) the nominal capacity and CLC for use of the device as a vehicle scale and (2) the nominal capacity and section capacity for use of the device as a railroad scale. Language will be added to Publication 14 stating that the GIPSA test car may be used to satisfy both testing requirements. The Sector also agreed to ask the SMA Technical Committee to review the minimum amount of known test weight required in publication 14 checklist for railway track scales and to submit recommendations for change, if necessary, to the Sector Technical Advisor, Dick Suiter (NIST-OWM) for inclusion in the agenda for the 1999 Weighing Sector meeting.

A proposal will be submitted to the S&T Committee to make the following changes to Tables S.6.3.a and S.6.3.b.

Add a footnote to clarify the marking requirements for these combination scales as outlined below.

20. Combination vehicle/railway track scales require marking of both nominal capacity and CLC for vehicle weighing and nominal capacity and section capacity for railway weighing. All other requirements relating to these markings will apply.

Add a reference to Note 20 to the following parameters in the first column of Table S.6.3.a.:

Nominal Capacity, Concentrated Load Capacity, Section Capacity.

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4) Expression of v_{\min} as a Percentage of Load Cell Capacity

Source: Carry-over from 1997 Weighing Sector meeting

Background: At its last meeting, the Weighing Sector discussed the marking of v_{\min} as a percentage of load cell capacity instead of marking v_{\min} in terms of mass. The Sector decided to carry this item over to enable further study and possible additional action to harmonize with changes being considered to R60. John Elengo (Consultant) has provided additional information relating to the factor "Y" as presented in 3rd Committee Draft (CD) OIML R60. This information is included in appendix D. The "Y" factor is a representation of E_{\max} / v_{\min} and may be beneficial in selecting load cells for a particular application.

Discussion: After receiving the information from John, the Technical Advisor received comments indicating that OIML may be reconsidering the use of this terminology. The Technical Advisor gathered additional information on the issue and updated members at the Sector's fall 1998 meeting.

At the September 1997 Sector meeting, it was stated that OIML allowed the marking of v_{\min} as a percentage of load cell capacity. At that meeting the Sector agreed it was appropriate to harmonize with OIML whenever possible. At the 1998 meeting, the Sector discussed the letter received from John Elengo. It was pointed out that if the v_{\min} were marked on a load cell in terms of percentage most field officials would have difficulty determining if the load cell was suitable for the application. Debbie Ripley (NIST-TSA) pointed out that the use of the "Y" factor was optional in OIML R60. It was also pointed out that the definition for " v_{\min} " in R60 stipulates that v_{\min} must be expressed in units of mass.

Conclusion: The Sector agreed that the manufacturer must mark the v_{\min} of a load cell in terms of mass; however, the manufacturer is not precluded from including supplemental markings. The Sector agreed that manufacturers holding existing CCs which express v_{\min} in terms of a percentage are to be contacted and advised of the decision, and that their CCs will be corrected to show v_{\min} in terms of mass. The Sector agreed that this change should not be applied retroactively to devices already in the field, but should only apply to devices manufactured after a specific date. The date will be determined by NTEP on a case by case basis when the applicable CC is re-issued. The Sector also agreed that a proposal should be submitted to the S&T Committee to revise the definition for v_{\min} to specify that it be expressed in units of mass. The proposed language would read as follows:

v_{\min} (minimum load cell verification interval). The smallest load cell verification interval (expressed in units of mass) into which the load cell measuring range can be divided. [2.20, 2.21] (Added 1996)

5) Marking Requirements for Components of an Electronic Cash Register (ECR) System

Source: Carry-over from 1997 Weighing Sector meeting

Background: At its last meeting, the Weighing Sector assigned the development of examples of markings required on the various components of an ECR system to the NTEP laboratories for clarification prior to inclusion in Publication 14. Included in Appendix E are the examples developed by the laboratories.

Discussion: The Sector was asked to approve the addition of the examples to the next edition of Publication 14. One member questioned if any changes were being made to the required markings. The Technical Advisor explained that the proposal was merely to add examples of how to apply marking requirements to Pub 14. No changes to the requirements were proposed.

Conclusion: The Sector agreed that the examples in Appendix E are appropriate with the following change: add n_{\max} to both the weighing element and indicating element. The NTEP laboratories will continue to review the examples and suggest any further additions. The Sector discussed the possibility of submitting a proposal to eliminate the requirement to mark CLC on indicators not permanently attached to a weighing element; however, the Sector agreed that this proposal would need further study before it could make such a recommendation. The

Sector agreed that the issue should be presented to the SMA Technical Committee for consideration; the Sector will revisit any recommendations that the SMA Technical Committee might make at the next Sector meeting.

6) Weight Classifier

Source: Carry-over from 1997 Weighing Sector meeting

Background: At its last meeting, the Weighing Sector decided to submit a proposal to the NCWM S&T Committee for adding a requirement to NIST Handbook 44 for scales which can function as either a weight classifier or as a normal round off scale. The addition would require a clear indication (enunciator) adjacent to the weight display on both the customer's and the operator's sides to indicate when the scale is in the weight classifier mode. The S&T Committee received input indicating that the proposal as submitted did not sufficiently address the issue. The S&T Committee returned the proposal to the Sector for further development.

Discussion: Sector Chairman Nigel Mills (Hobart Corporation) presented an alternative proposal to the Sector and asked the Sector to consider submitting the alternative proposal to the NCWM S&T Committee for consideration at the January 1999 NCWM Interim Meeting. The Sector discussed whether or not the ability to select the mode of "weight classifier/normal round off" should be a sealable parameter. The Sector agreed that this was a sealable feature since it affected the metrological operation of the scale. A question was also asked as to what was the appropriate marking for either of the two modes. It was suggested that the labs review the marking issue and make a recommendation to the Sector.

Conclusion: The Sector determined that the NTEP Labs should determine appropriate identification of the operating mode, such as "WC" for weight classifier and "NR" for normal round off. The Sector agreed that the proposed requirement should be non-retroactive. The Sector agreed that the Table of Sealable Parameters in the Scales Checklist of Publication 14 should be modified to reflect that the enabling/disabling of a weight classifier mode of operation is a sealable parameter. The Sector also agreed that the proposed language should read:

**S.1.8.3.1. Scales which will function as either a normal round-off scale or a weight classifier shall be provided with a sealable electronic means for determining the mode of operation.
[Nonretroactive as of January 1, 2000]**

7) Diagrams for Marking Components of POS Systems

Note: This item was included in error in the original agenda. It is a duplication of agenda item number 5.

8) Clarification of Scales to be Selected for Test When the Range of Capacities is "Narrow"

Source: Carry-over from 1997 Weighing Sector meeting

Background: At its last meeting, the Weighing Sector decided that the general policy of applying 4:1 from extremes of the family capacity and 10:1 overall ratios was acceptable for what must be submitted for the evaluation of a family of scales with a capacity of less than 30 000 lb. The Technical Advisor was asked to make recommendations for any additional changes to the Publications 14 criteria to harmonize with WELMEC. Darrell Flocken (Mettler-Toledo) provided excerpts from an NMi policy that WELMEC and the Notified Bodies have adopted as a guideline to the Technical Advisor.

The NMi document lists considerations to be taken into account when choosing a configuration out of a series such as, highest accuracy class, maximum number of divisions, and lowest verification scale interval. There does not appear to be any conflict with the recommended ratios; consequently, no changes were recommended to Publication 14. (Copies of the pertinent sections of the NMi document are available upon request from the Technical Advisor.)

Discussion: There was little discussion of this issue. Sector Chairman Nigel Mills (Hobart Corporation) suggested that the NTEP labs continue to monitor requests to cover families of devices and to identify any problems with this policy. If problems are discovered, the item can be brought back to the Sector for further discussion.

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Conclusion: The Sector re-affirmed their decision made last year and suggested that the labs continue to monitor the issue. If a problem is found with the ranges, the problem will be addressed next year.

9) Marking of Weighing Elements and Indicators That Are "Not Permanently Attached"

Source: NTEP Labs

Background: At its last meeting, the Weighing Sector decided that a proposal should be submitted to the S&T Committee to change the headings of the 3rd and 4th columns of Table S.6.3.a. to read "Indicators with CC" and "Weighing and Load-Receiving Element with CC", respectively. At the 1998 NCWM Interim Meeting, the S&T Committee rejected the proposed language and suggested that the Weighing Sector make an alternative proposal. The S&T Committee was concerned that the proposed changes would result in the elimination of marking requirements for non-permanently attached indicators in non-NTEP states. This item was not included on the agenda of the last meeting of the NTEP Laboratories; therefore, the issue had not been reviewed by the NTEP labs since the January 1998 S&T Committee decision.

No alternative recommendation was developed; however, there was still a perceived need to develop guidelines to help ensure consistent interpretation of the marking requirements for non-permanently attached components among the NTEP laboratories.

Conclusion: The Sector noted that the number of non-NTEP states is getting smaller, so the concerns of the S&T Committee relative to non-NTEP States may no longer be as much of a problem. However, the Sector recognized the need to clarify the application of the terms in Publication 14 to ensure consistent interpretation by the laboratories and manufacturers. Since neither the SMA Technical Committee nor the NTEP labs addressed this issue at their respective meetings earlier this year, the Sector asked that each group review the issue prior to the 1999 Sector meeting and bring back recommendations to the Sector.

10) Grain Test Scales with NTEP CCs

Source: Grain Inspection Packers and Stockyards Administration (GIPSA)

Background: At the Weighing Sector's last meeting, Bill Bates (GIPSA) explained the concern within GIPSA that the number of grain test scales being manufactured conforming to both GIPSA and NIST Handbook 44 requirements for grain test scales is dwindling. Most of the grain test scales being manufactured only comply with NIST Handbook 44. The Sector formed a work group to review the differences between GIPSA requirements and those in Handbook 44 relative to grain test scales. Paul Hadyka (GIPSA) was to be asked to serve as chairman of the work group on grain test scales.

Discussion/Conclusion: The Sector was asked to review the recommendations of that work group as outlined in Appendix F. The Technical Advisor, Dick Suiter (NIST-OWM) reviewed the issue but was unable to provide much feedback beyond what GIPSA provided. The Sector reviewed the information forwarded by the Work Group on Grain Test Scales which was established at the last Sector meeting; however, no one from the Work Group was present to provide clarification on some of the items. The Sector asked that the Technical Advisor visit with Work Group Chairman, Paul Hadyka, GIPSA, to clarify whether or not any action is required by the Sector to propose changes to Handbook 44 or Publication 14.

New Items

Weighing Issues

11) Initial Zero Setting Mechanism Test Procedure

Source: Maryland NTEP Laboratory/NIST-OWM

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Background: At the June 1998 meeting of the NTEP Laboratories, the participants were asked to review a procedure for testing the initial zero setting mechanism (IZSM) of a scale in the field. At this time, there is no procedure in Publication 14 for testing this feature during an evaluation.

During a September 1998 Asia Pacific Legal Metrology Forum (APLMF) R76 training class, a procedure was presented for testing IZSM. That procedure was revised and adapted for possible inclusion in Publication 14 as outlined in Appendix G. Unless the Sector objected, the procedure was proposed to be included in the next edition of Publication 14.

Discussion: The Sector discussed the proposed procedure and pointed out that the last sentence needed to be changed from “determine if the device complies” to “indicates that additional testing should be performed”. One of the labs indicated that some field officials have a difficult time determining if a device has an IZSM, particularly when the “on/off” switch is used to activate the zero setting mechanism. The proposed procedure can be used for both lab and field evaluations.

Conclusion: The Sector agreed that the laboratories should begin using the procedure included in Appendix G. The procedure will be incorporated in Publication 14. The last sentence of the draft procedure will be changed from "determine if the device complies" to "indicates that additional testing should be performed." The laboratories were asked to provide feedback to the Sector on any problems they encounter with the procedures.

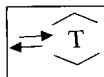
12) Combined "Tare Enter"/"Tare Clear" Key

Source: New York NTEP Laboratory

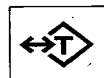
Background: Recently the New York NTEP Laboratory was asked to evaluate a device, which utilized a common key for tare entry and tare clear operations. A proposal for an acceptable marking for the key was discussed and approved at the June 1998 meeting of the NTEP Laboratories.

This marking was proposed to be added to the list of acceptable markings in Publication 14 as outlined in Appendix H.

Discussion: The Sector Technical Advisor informed the Sector that subsequent to the mailing of the agenda it was discovered that the WELMEC list of international symbols included a symbol for “Tare Enter/Tare Clear.” Both examples were included in the attachments sent out prior to the meeting. The Sector generally agreed that it is preferable to harmonize Publication 14 with the international symbols wherever possible.



New York Example



International Symbol 2.4.6

Conclusion: The Sector agreed that the international symbol number 2.4.6, as shown in the WELMEC document is acceptable and should be included in the List of Acceptable Abbreviations/Symbols Table on Page 1-117 of Publication 14. The Sector believes that, because of the widespread acceptance of the symbols listed in the WELMEC document, NTEP should try to the extent possible to harmonize with these symbols. Consequently, the Sector agreed that the symbol encountered by the New York laboratory is not acceptable and should be listed in the unacceptable column of the table of acceptable abbreviations. In addition, the Sector agreed that a letter should be written to the manufacturer who submitted the device to the New York laboratory advising them of this decision and indicating that the symbol will not be accepted on any future models submitted.

13) POS Receipt Format

Source: NTEP Laboratories

Background: At the June 1998 meeting of the NTEP Laboratories, participants were asked to review the format of receipts collected from a number of supermarket checkouts. (Some samples of these receipts are included in Appendix I. That review resulted in the opinion that there needed to be some guideline in Publication 14 for the format for electronic cash register (ECR) receipts to insure consistency of interpretation among the laboratories.

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Recommendation: The Sector was asked to provide input for the development of such guidelines. The Sector was also asked to consider forming a subgroup to further develop the guidelines.

Discussion: The Sector Technical Advisor, Dick Suiter (NIST-OWM) provided background on the issue and pointed out some of the problems identified at the June 1998 meeting of the NTEP Laboratories. For example, on some receipts the # sign is used to designate pounds. On some, the “@” symbol for pricing multiple items looks like the number 2 or 6. Unit price expressions vary considerably. It was pointed out that there was not adequate representation from the ECR Manufacturers at the Sector meeting to discuss this item appropriately. It was noted that the ECR checklist is old and may need to be updated, and new examples of acceptable and unacceptable receipts should be included in the checklist. It was also noted that consumer and user groups should be involved in the development of receipt formats since some receipt formats can be modified in the field.

Conclusion: The Sector agreed that input is needed from consumer and user groups on the format and content of receipts issued by POS systems. Dennis Krueger, NCR, agreed to contact the Food Marketing Institute (FMI) to ask if they might provide a forum for obtaining input from these groups in the development of criteria.

The Sector agreed that the ECR checklist needs to be updated to reflect changes in technology and the marketplace, but recognized that such a project would require significant resources. Rather than doing a review of the complete checklist, the Sector agreed that individual sections of the checklist, such as the receipt content and format, should be reviewed and revised with the goal of eventually reviewing the entire checklist.

14) Relocation of Analog to Digital (A/D) Conversion in a Weighing System

Source: Maryland NTEP Laboratory

Background: During a recent NTEP evaluation of an indicator with A/D conversion located within the indicator, as is normally the case, the laboratory was asked if the Certificate of Conformance could list the option of coupling to digital load cells by utilizing the A/D conversion capability of the cells and bypassing the A/D conversion section of the indicator. The laboratory felt that, to be consistent with previous evaluations, two separate evaluations needed to be conducted: one with analog input and one with digital input. The manufacture felt that only analog testing was necessary.

The Sector was asked to provide input for future submissions of a similar nature and to determine whether or not criteria need to be added to Publication 14 to address this issue. Another scenario that should be considered is the location of the A/D conversion at a third point such as in a junction box.

Discussion: Several members of the Sector pointed out that it is not necessarily possible to connect an indicator with just any digital load cell and have a working system. Different communication protocols are utilized by different load cell manufacturers. It was generally agreed that any A/D converter must be subjected to influence factor testing regardless of the location within the system. If an indicator is tested with internal A/D conversion then the ability to communicate with a digital load cell would need to be verified with additional testing; however, re-evaluation of compliance with influence factor requirements would not be required. Testing in this manner would only demonstrate the ability to communicate with a specific digital load cell and, consequently, the NTEP CC must list the specific cell/s for which compatibility has been demonstrated. It would not necessarily mean the indicator would work with all digital load cells from various manufacturers.

Conclusion: The Sector agreed that if a manufacturer applies for a Certificate of Conformance for an indicator with the option of compatibility for both analog and digital load cells, the evaluation of the indicator will not require two complete tests. A complete test including influence factor testing of the indicator with the A/D converter would be required. The laboratory will then need to verify that the indicator will work correctly with both analog and digital load cells, but influence factor testing a second time is not required. The indicator manufacturer is required to provide evidence of compatibility for all load cells to be listed on the NTEP CC. The Sector also re-affirmed the position that influence factor testing is required for A/D converters regardless of location in the system.

15) Identification of "lb-oz" on Scale Displays

Source: New York NTEP Laboratory

Background: On an indicator recently submitted for NTEP evaluation, the NTEP laboratory felt that the display of "lb-oz" units was confusing. At the June 1998 meeting of the NTEP laboratories, the display in question was discussed and an example for addition to Publication 14 was developed as outlined in Appendix J

The labs proposed that, unless the Sector objected, the example would be added to the next edition of Publication 14.

Discussion: The Sector reviewed the example encountered by the New York Laboratory, along with acceptable examples which the NTEP Laboratories had developed. The Sector discussed which options were acceptable, which options were not acceptable, and which options were preferred.

Conclusion: The Sector was unable to reach a consensus on whether or not the first example outlined in Appendix J is unacceptable; however, the Sector agreed that the two options marked in the latter example are acceptable. The Sector also agreed that the examples should be included in Publication 14. The acceptable example should also note that other configurations may be acceptable. The labs will continue to work with manufactures on a case by case basis.

16) Representation of Negative Values on Scale Displays

Source: Ohio NTEP Laboratory

Background: On an indicator recently submitted for NTEP evaluation, the NTEP laboratory felt that the display of negative values was confusing. At the June 1998 meeting of the NTEP laboratories, the display in question was discussed and an example for addition to Publication 14 was developed as outlined in Appendix K.

The labs proposed that unless the Sector objected, the example be added to the next edition of Publication 14.

Discussion: The Sector reviewed the example encountered by the Ohio Laboratory. The Sector discussed acceptable options for the display of negative values. Though it was generally agreed that having the negative sign adjacent to the most significant digit was preferred, there might be other options if the resulting indication could be clearly understood. The Sector agreed that the NTEP Laboratories should have the latitude to use judgement to evaluate the clarity and understandability of various displays.

Conclusion: The Sector agreed that the example shown in Appendix K can be included in Publication 14 as an example of an unacceptable portrayal of a minus indication. The Sector also agreed that the best solution for identifying a minus indication is one where the minus sign appears adjacent to the most significant digit; however, the Sector noted that other alternatives may be acceptable. The Sector discussed the use of a different color as a possibly acceptable option. The Sector agreed that each device display should be evaluated on a case-by-case basis.

17) Parameters for Scales Greater Than 200,000 lb Capacity

Source: NIST-OWM

Background: Guideline number 5 in Section C on the list of parameters in the Publication 14 NTEP Technical Policy for Scales, page 1-11 states that a Certificate of Conformance can cover (a) nominal capacities from 50 percent to 135 percent of evaluated capacity and (b) widths from 70 percent to 120 percent of the width of the platform tested. However, there is also a statement that these policies do not apply to double-wide scales nor to scales with capacities greater than 200 000 lb.

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Applications have been submitted for devices, such as combination vehicle/railway track scales and scales used to weigh off-road vehicles. Although these devices generally have capacities greater than 200 000 lb, it did not seem appropriate to exclude them from the provisions of the policies in parts (a) and (b). Consequently, NIST-OWM has been applying the criteria in parts (a) and (b) to combination vehicle/railway track scales and scales used to weigh off-road vehicles on an *ad hoc* basis. NIST-OWM proposed to continue this policy and to remove the reference to "capacities greater than 200 000 lb" from the note on page 1-11 of Publication 14.

Discussion: The Sector Technical Advisor Dick Suiter (NIST-OWM) reviewed the background for this issue. Sector Chairman Nigel Mills (Hobart Corporation) asked for input as to the history of the issue. Several Sector members recalled that, at the time the limitations were placed in Publication 14, the Sector was concerned with the ability to adequately test double-wide vehicle scales and scales designed to weigh off road vehicles. There was consensus within the Sector that the family criteria should not be applied to the evaluations of double-wide vehicle scales. The Certificate of Conformance for a double-wide vehicle scale should only apply to the device tested. It also was pointed out that there is no need for vehicle scales (including the vehicle portion of vehicle/railway track scales) designed for weighing highway vehicles to have a capacity greater than 200 000 lb.

Conclusion: The Sector agreed that, until more information is available from the test procedure proposed in Agenda Item 2, the family criteria listed in Section C should not apply to double-wide devices. Thus, the test of a double-wide device will presently result in a CC only for the device that was tested. The concept of applying the family criteria can be revisited after some preliminary testing is completed using the proposed double-wide test procedures. The Sector also agreed that the family parameters should not apply to vehicle scales above 200 000 lb, but the criteria are appropriate for railway track scales, combination vehicle/railway track scales, large hopper scales, and other devices over 30 000 lb used to weigh other than on- or off-highway vehicles. As noted in agenda item 3 of this report the Sector agreed to ask the SMA Technical Committee to review the minimum test load required in the Publication 14 checklist for railway track scales.

The Sector agreed to modify the last sentence of NTEP Technical Policy for Scales Section B, Part 5, Pub 14 page 1-11 modular vehicle scale criteria as follows:

The policy specified in parts "a" and "b" above do not apply to ~~double-wide scales~~ vehicle scales ~~nor to~~ scales with capacities greater than 200 000 lb.

18) Weight Classifier Test Procedures

Source: NTEP Laboratories

Background: At present, there is no prescribed procedure for the testing of weight classifiers in Publication 14, Handbook 44, or the Examination Procedure Outlines. At least two procedures have been developed: one by Henry Oppermann as part of a Certificate of Conformance and one by Jim Truex for use in the Ohio NTEP Laboratory.

Discussion: The three procedures outlined in Appendix L were presented to the Sector for review. Two had been submitted to the NTEP laboratories for review by the Maryland Laboratory. The third had been developed by Henry Oppermann (NIST) for inclusion on the Certificates of Conformance of the first weight classifiers evaluated to aid field officials in the conduct of routine inspections of the devices. The Sector agreed that, with some modification, the second procedure from Maryland could be included in Publication 14 for the evaluation of weight classifiers. This procedure could also be adapted for use by field officials.

Conclusion: The Sector reviewed the procedures included in Appendix L. The Sector determined that none of the procedures was completely adequate for an NTEP evaluation. The labs were asked to continue to develop a procedure for inclusion in Pub 14. If completed in time, the procedure can be included in the final Sector Meeting Summary Report. (Editor's Note: At the NTEP Lab meeting following the Sector meeting, Jim Truex volunteered to develop the procedure for inclusion in Pub 14.)

19) Frequent Shopper Program Format for Receipts and Labels

Source: NTEP Laboratories

Background: NIST-OWM continues to receive questions as to the proper method for presenting information relative to “frequent shopper” discount programs on customer receipts. NIST-OWM has also heard complaints related to the accuracy of price computations on some of the receipts. The Sector was asked to provide guidance to the NCWM for the development of possible requirements or regulations in this area.

Discussion: At its Fall 1997 meeting, Dennis Krueger (NCR) and Steve Cook (CA) agreed to work on this issue and present recommendations to the Sector. They collected some information on this issue, but still needed additional input. Anyone wishing to contribute to this work was asked to contact Dennis or Steve.

Technical Advisor Dick Suiter (NIST-OWM) informed the Sector that NIST-OWM continues to receive questions related to the requirements for frequent shopper programs and the correct presentation of information on the sales receipt. To date, no specific guidelines have been developed by either the NCWM S&T or L&R Committees. The use of frequent shopper or customer loyalty programs is growing: they are found not only in supermarkets, but also in retail motor fuel outlets. Most of the problems that have been discovered at the field level stem from the lack of mathematical agreement of unit price, quantity, and total price on customer receipts. One Sector member indicated that his company has developed approximately 20 methods for incorporating frequent shopper programs in the market place. Nigel Mills (Hobart) indicated that even the best algorithms may still cause total price errors at some combinations of quantity and unit price. The Sector agreed that some of the issues fall within the scope of this group; however, development of some issues are the responsibility of the NCWM L&R Committee.

Conclusion: The Sector recognized that some issues related to frequent shopper programs are under the purview of the Sector (those functions related to the interface with the point-of-sale scale) and some are under the purview of the Laws and Regulations Committee (those functions related to method of pricing and printing of package labels). The Sector acknowledged the need for input from other groups. Dennis Krueger, NCR, agreed to contact representatives from Food Marketing Institute (FMI) to investigate how the Sector might work with representatives from FMI on this issue. Dennis will work with Steve Cook (CA) to bring back recommendations to the Sector on how to proceed further with this issue.

20) Indication of "d" & "e" on Class II Scales

Source: Ohio NTEP Laboratories

Background: On a Class II scale which was recently submitted for NTEP evaluation, the Laboratory felt that the display of "d" and "e" was confusing. The device had a "d" of 0.05 g and an "e" of 0.1 g. Confusion arises when there is an indication of 0.1 g. The display could be interpreted as one "e" or two "d". At the last meeting of the NTEP laboratories, the display in question was discussed and Bill West was asked to draft a proposal for presentation to the Weighing Sector and possible submission to the NCWM. Bill West and the Sector Technical Advisor developed a proposal for Sector consideration at its October 1998 meeting.

Sector members were provided with a copy of the proposal and asked to review it for possible submission to the NCWM S&T Committee at the January 1999 NCWM interim meeting.

Discussion/Conclusion: Sector members reviewed the proposal from the laboratories. The Sector agreed that the proposal should be forwarded to the S&T committee, but noted that the formula should include the qualification of the unit of measure for "e".

Add a new paragraph S.1.2.2. & add language to footnote 1 of Table 3 to Section 2.20 Scales of Handbook 44.

S.1.2.2. Verification Scale Interval. - Class I and II - If $e \geq d$, the verification scale interval "e" shall be determined by the expression:

$$d < e \leq 10d$$

where $e = 10^k$ of the unit of measure and k is a positive or negative whole number or zero. This requirement does not apply to a Class I device with $d < 1 \text{ mg}$ where $e = 1 \text{ mg}$. If $e \geq d$, the value of "d"

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shall be a decimal submultiple of "e", and the ratio shall not be more than 10:1. If e [d, "d" shall be differentiated from "e" by size, color, etc. throughout the range of weights displayed as "d."

21) Final Serial Number for Inactive Certificates of Conformance

Source: Steve Malone, Chairman NTEP Committee

Background: Presently, if a manufacture allows a Certificate of Conformance to become inactive they are asked to voluntarily provide the serial number for the last device of that model manufactured for commercial use. If the serial number is provided, it is printed in a table in Publication 5. If the serial number has not been provided and a new device is found by a field official, it is difficult to determine if the device is covered by a CC.

A proposal has been submitted to the NCWM NTEP Committee to modify Section N. subsection 3. of the Administrative Procedures of Publication 14 as outlined below. The Sector was asked to review this proposal and provide comments to the NTEP Committee on this issue.

4. Inactive Status

An INACTIVE Certificate of Conformance is a Certificate which was previously active, but the devices are no longer being manufactured or remanufactured for commercial applications. However, devices already manufactured, installed or in inventory, but not yet sold, may be used, sold, repaired, and resold under an INACTIVE Certificate of Conformance, provided that the manufacture supplies NTEP with the serial number and or date code of the last device of that model manufactured for commercial applications. The serial number and or date code must be provided at the time that the manufacturer first designates the Certificate as INACTIVE. If the manufacture chooses not to provide the last serial number and or date code for the device model, the Certificate of Conformance will not apply to any devices of that model sold after the date that the Certificate becomes INACTIVE.

Discussion: The Sector was informed of the discussions by the Measuring Sector at their September meeting in Albuquerque, NM. The Measuring Sector gave general support to the issue with some suggested changes. The Sector was informed by some of the manufacturers that not all serial numbers are incremental in nature and that serial numbers can be alpha/numeric. Several members expressed concern that dealers and distributors could inadvertently be penalized if they sold devices from their own stock which had been manufactured by a company who subsequently went out of business and failed to provide NTEP with the serial number of the last device produced. Sector members were asked to provide input directly to the NTEP Committee of the NCWM.

Conclusion: This item was presented to the Sector as an informational item. An informal vote on the item resulted in a small majority opposed to the proposed language. Comments indicate a concern about situations where a manufacturer goes out of business and fails to provide a last serial number. The result of the proposal could be to penalize a distributor who bought devices prior to final manufacture and still has those devices in stock.

22) Calibration Period for Test Weights used for NTEP Evaluations

Source: NIST-OWM

Background: The required calibration period for "Certified Test Weights" differs among the various States. The NTEP laboratories are sometimes uncertain if the test weights available for field evaluations have a "calibration certificate" consistent with local requirements or if they are overdue for calibration. There are also questions concerning what is an acceptable time period between calibrations.

It is the opinion of NIST-OWM that test weights used in an NTEP evaluation must be traceable to NIST (i.e., calibrated by NIST or by a laboratory authorized by NIST) and must have a certificate of calibration issued within the past year. Unless the Sector disagrees, NIST-OWM proposes to include appropriate language in the next edition of Publication 14.

Discussion: The NTEP Laboratories agree in principle that uniform policies are desirable; however, some of the labs related cases of evaluations being conducted in another state where the NTEP official had no control over the calibration period for the standards being used. The Sector was informed by some of the States represented that the required calibration periods are not all based solely on time. California, Oklahoma, and New York all have variable calibration time frames, determined by their Metrology Laboratory, and based on past calibration history of the standard.

Conclusion: The Sector was unable to reach a consensus on the proposal. The Sector recognized the need for uniformity in the selection of equipment used in NTEP evaluations; however, the Sector also acknowledged the need for the NTEP laboratories to use judgement in the acceptance of documentation of calibration, regardless of the time period between calibrations. The Sector asked that the laboratories revisit the issue to develop a proposal to address weights used in NTEP evaluations.

23) Marking of Temperature Range on Scales

Source: NIST-OWM

Background: There is a discrepancy between Handbook 44 and Publication 14 in the requirement for marking of temperature ranges on a scale. Handbook 44 requires the marking if the range is other than -10°C to 40°C . Publication 14 page 1-19 states that a Class III, III L, or IIII device must be marked with a temperature range if it is designed to operate over a temperature range that is narrower than -10°C to 40°C . Questions have also been raised over whether it is appropriate to use a scale beyond the range marked on the device and/or listed on the Certificate.

The Sector was asked to clarify the intent of the marking requirement.

Discussion: There was considerable discussion with differing views as to what the current temperature marking requirements really mean. One view was that it is only appropriate to use a device within the range marked on the device or stated on the Certificate of Conformance. An opposing view was that as long as the range was at least -10°C to 40°C it is acceptable to use the device outside of that range. There was consensus that, if the device was marked with a range of less than -10°C to 40°C , the application of the device is limited to use within the marked range. The Sector agreed that, if possible, the requirement should harmonize with OIML. Clause 3.9.2.1., in OIML R76 states "If no particular working temperature is stated in the descriptive markings of an instrument, this instrument shall maintain its metrological properties within the following temperature limits: -10°C , $+40^{\circ}\text{C}$."

Conclusion: Based on a vote of 9 in agreement and 5 in disagreement, the Sector agreed to submit a proposal to the S&T Committee to modify Note 5 in Table S.6.3.a. as follows:

Required only on Class III, III L, and IIII scales devices, if the temperature range on the NTEP CC is other narrower than and within -10 to 40°C (14 to 104°F). [Nonretroactive as of January 1, 1986]

Jim Truex, OH, offered to develop an alternative proposal for the Sector; however, the Sector suggested that his proposal be submitted directly to the S&T Committee.

24) Software Evaluation Policy

Source: NIST-OWM

Background: At its July 1998 meeting, the NCWM decided that NTEP would no longer have a separate category of "Software" for Certificates of Conformance (CCs) nor as a device type listing in Publication 5. Any application for a software-based system would require evaluation of the complete weighing or measuring system.

The Weighing Sector was asked to provide guidance in the development of the format of CCs for software-based weighing systems. This same item was discussed at the September 1998 meeting of the NCWM Measuring Sector Albuquerque, New Mexico. The Measuring Sector formed a small workgroup, chaired by Steve Cook, to work on this issue relative to measuring devices. The Measuring Sector also recognized the need to do a review of the general format of CCs for measuring devices and noted that some issues are common to both weighing and measuring devices. The Measuring Sector suggested that volunteers from the Weighing Sector might also wish to in the Measuring Sector's work group.

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Discussion: The Sector discussed the recommendation from the Software Work Group and the decision of the NCWM last July 1998. There were different opinions as to what the recommendation stated and what the final decision really meant. Three members of the Software Work Group, Steve Cook (CA), Wes Diggs (VA), and Dennis Krueger (NCR) offered clarifications of the intent of the Work Group. The Work Group had agreed that nearly all electronic devices incorporate software. NTEP should evaluate complete operating systems and not issue a Certificate of Conformance under the separate category of “Software”. Sector Chairman Nigel Mills (Hobart Corporation) reminded the group that the scope of this discussion was to develop correct “category” heading and language for Certificates of Conformance.

Conclusion: The Sector acknowledged that there are issues to be addressed with respect to the terminology used on CCs issued to software-based weighing systems and the terminology used in Publication 5 for these systems. The following people agreed to participate in a work group established by the Measuring Sector and chaired by Steve Cook, CA: Dennis Krueger, NCR; Jim Truex, OH; Darrell Flocken, Mettler-Toledo; Mark Erickson, Rice Lake Weighing Systems; and Andrea Buie, MD. The work group will correspond by telephone, e-mail, and postal mail to resolve the issues as quickly as possible. The Sector acknowledged the need for the group to work quickly to enable NTEP to address several pending software-based weighing system CCs to be consistent with the intent of the NCWM’s July 1998 decision.

25) Width of the Index of an Indicator

Source: NIST-OWM

Background: Paragraph S.1.4.3. (a) of 2.20 Scales in Handbook 44 requires that the width of the index of an indicator be not greater than the width of the widest graduation. When this requirement was adopted, subordinate graduations were not considered as significant as main graduations. If the index of the indicator were allowed to be as wide as the main graduation, it was easier to tell when the index of the indicator was centered on the main graduation. In some cases, subordinate graduations could be completely covered by the index of the indicator. The Measurement Canada requirement is that the width of the index be not greater than the width of the narrowest graduation. It appears that the Measurement Canada requirement may be more appropriate. With this requirement, no graduation could be completely obliterated by the index of the indicator.

The Sector was asked to consider submitting a proposal to the NCWM S&T Committee of NCWM to change S.1.4.3. (a) as follows to harmonize the requirement with Canada:

S.1.4.3. Width. The width of the index of an indicator in relation to the series of graduations with which it is used shall not be greater than:

- (a) the width of the ~~widest~~ narrowest graduation,

Discussion: The Technical Advisor, Dick Suiter (NIST-OWM) gave the rationale behind having the index of an indicator either wider or narrower than graduations as in the example above. The Sector agreed that “narrower” was preferable.

Conclusion: The Sector recognized that the current language in Handbook 44 paragraph S.1.4.3. could result in an indicator overlapping one or more subordinate graduations. The Sector agreed that a proposal should be submitted to the S&T Committee to modify S.1.4.3. on a non- retroactive basis as follows:

S.1.4.3. Width. The width of the index of an indicator in relation to the series of graduations with which it is used shall not be greater than:

- (a) the width of the ~~widest~~ narrowest graduation,
[Nonretroactive as of January 1, 2000]

26) Power Failure Test

Source: NIST-OWM

Background: Publication 14 currently specifies that audit trail information must be stored in non-volatile memory for at least 30 days. At the time that this criteria was added to Publication 14, it was decided that NTEP testing would not routinely be performed to verify compliance with the criteria; rather, the manufacturer would provide information to NTEP to indicate compliance with the criteria.

During recent work with the liquid-measuring device laboratory in Measurement Canada, it was noted that Canada requires a power loss test of 7 days.

The Sector was asked to consider whether or not a 30-day power failure test is necessary, or if a 7-day test would be sufficient to determine the stability of the audit trail memory in a device in the event of a power failure.

Discussion: Renald Marceau (CD) explained the Canadian requirements for electronic indicators from Weights and Measures Ministerial Specifications SVM-1 Electronic Registers and Ancillary Equipment Incorporated in Metering Assemblies Specifications. The test requirement is only applicable to Retail Motor Fuel Dispensers. Neither the US nor Canada perform a test to verify the ability of weighing equipment to meet the 30-day retention requirement.

Conclusion: In its discussion of this issue, the Sector realized that the proposed change is not needed for harmonization. Canada has a 7-day requirement for measuring devices, but not for weighing devices. Both Canada and the US require that audit trail information be maintained in non-volatile memory for at least 30 days; information is requested from the manufacturer to indicate compliance, but a specific test of the 30-day capability is not performed. Consequently, no change was proposed to Publication 14.

27) Appropriate Abbreviations for Preface to Serial Number

Source: NIST-OWM

Background: General Code paragraph G-S.1. (d) in Handbook 44 requires the serial number to be prefaced by words, an abbreviation, or a symbol that clearly identifies the number as the serial number. Questions were raised over whether or not the term "No." is sufficient to designate the serial number on a device. It was the opinion of NIST-OWM that this is not sufficient to distinguish the serial number from other numbers such as a part number or a registration number that might be marked on the device.

Immediately prior to the September 1998 Measuring Sector meeting, the NTEP measuring laboratories developed a list of acceptable markings to be added to Publication 14 as examples. The Measuring Sector was unable to reach a consensus on the suggested list; however, there was general agreement that a proposal should be submitted to the S&T Committee asking that the issue be reviewed. Comments were also made indicating that there are similar concerns with section (b) of G-S.1. and that the language for (b) should mirror the language in (d). In the interim, the Measuring Sector indicated that the NTEP laboratories should continue to work together to establish consistent guidelines for applying this criteria.

Discussion: The Weighing Sector was asked for an opinion on whether or not "No." meets the requirement of G-S.1. (d). The Sector was also asked to determine whether or not a proposal should be submitted to the S&T Committee to modify G-S.1. to clarify acceptable abbreviations for serial number and to modify the marking requirement for model number to mirror the marking requirement for serial number requirement.

Sector Technical Advisor Dick Suiter (NIST-OWM) reviewed the background of the issue and the discussions held at the recent Measuring Sector Meeting. Renald Marceau (Measurement Canada) informed the Sector that either "S/N" or "Serial Number" would be acceptable in Canada.

Conclusion: The Sector agreed that it is appropriate to add examples to the Table of Acceptable Abbreviations/Symbols on page 1-117 and 1-118 of Publication 14 to indicate acceptable designations of serial number. The Sector agreed to the following list:

Appropriate:
"Serial Number" "S/N" "SN" "Ser No." "Ser" "S No" "Ser #"

Inappropriate:

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"S#" "No."

The Sector also agreed that a proposal should be submitted to the S&T Committee asking that G- S.1.(d) be clarified to include examples of acceptable designations of the serial number.

The Sector recognized that the Measuring Sector is submitting a proposal to add terminology to Handbook 44 to require definitive language to identify the model number; however, the Sector could not reach a consensus to support such a proposal.

28) Expansion of Pre-NTEP CCs

Source: NIST-OWM

Background: Section B of the NTEP Technical Policy for scales allows CCs issued as a result of NTEP testing to cover ranges of capacities and platform sizes. This policy assumes that, for a device tested by NTEP, the performance of other capacities and sizes of devices in that same family can be predicted within certain limits to be similar to the device tested. This policy is also based upon the fact that NTEP testing is performed with a minimum amount of test weight based upon the CLC and/or the capacity of the device. The policy also assumes that NTEP testing is performed to a fairly rigorous set of testing criteria.

Section H of Publication 14 allows NTEP to issue pre-NTEP Certificates of Conformance based upon pre-NTEP type approvals issued by jurisdictions prior to the establishment of NTEP. Pre-NTEP Certificates of Conformance issued to date have included only those capacities listed on the original Certificates of Approval.

Questions have been raised about whether or not it is appropriate to apply the range criteria outlined in Section B of the NTEP Technical Policy to pre-NTEP devices. For example, could a pre-NTEP CC be expanded to cover devices with capacities falling between the largest and smallest capacities without additional testing? Would it be appropriate to cover devices with platform sizes falling between the largest and smallest dimensions of the devices listed on a pre-NTEP CC? However, NIST-OWM did not believe it was appropriate to apply the range criteria in Section B to expand a pre-NTEP CC to cover devices above and below the largest and smallest size and capacity of device listed on the CC.

This position is based on the fact that data is not typically available to identify what testing (if any) was performed on the device to obtain the pre-NTEP type approval. NTEP typically has no data to indicate which device listed on the pre-NTEP approval certificate was tested. Since the range criteria requires information about the specific device tested and is dependent upon a minimum amount of testing, NTEP does not believe it is appropriate to extend the range of devices beyond those already listed on the CC.

The Sector was asked to review this issue and develop a policy to apply to pre-NTEP devices.

Discussion: The Sector discussed the original intent of Pre-NTEP Certificates of Conformance. It was noted that the NCWM NTEP Committee (formerly the NTEP Board of Governors) had previously denied appeals asking for the expansion of a Pre-NTEP Certificate of Conformance beyond those devices listed on the pre-NTEP type approval certificate. The Sector agreed that, when issuing a pre-NTEP type approval, adding capacities and sizes between existing capacities listed on a pre-NTEP certificate is technically acceptable.

Conclusion: Based on a vote of 11 in agreement, 2 in disagreement, and 4 abstentions, the Sector agreed that a proposal should be forwarded to the NTEP Committee covering the expansion of pre-NTEP CCs. The proposal would recommend that the NTEP Committee reconsider its previous position on pre-NTEP CCs to allow the CC to cover devices in between capacities and sizes already listed on the CC. The proposal should also state that the CC cannot be expanded to include capacities, sizes, division sizes, number of divisions, etc. beyond what is covered on the original CC. Criteria listed in Publication 14 Technical Policy for Scales would still apply within the limits of the existing CC. The Sector agreed that Tina Butcher, NIST-OWM, would develop examples to be submitted along with the recommendation. If the NCWM NTEP Committee adopt the proposal, NTEP will notify the holders of all pre-NTEP CCs of the change in policy and give them the opportunity to have their CCs amended to conform to the adopted guidelines.

Load Cell Issues

29) Conversion of Mechanical Lever Systems to Digital

Source: NTEP Laboratories

Background: The Sector had decided previously that converting a mechanical scale to accept a digital indicator by placing a load cell at the end of the transverse lever is a modification of the original type. However, the conversion option could be added to an NTEP CC for the mechanical version without additional testing. NTEP was asked if it is acceptable to remove the transverse lever and insert two load cells. This question was discussed at the June 1998 meeting of the NTEP Laboratories, and other examples were given such as removing a torsion lever and inserting three or four load cells.

The Sector was asked to readdress this issue and decide how far back into the lever system a service company can go with the addition of load cells before additional testing would be needed to cover the modified device on the Certificate of Conformance.

Discussion: Several examples of conversions that have been encountered by NTEP were given. It was the opinion of several of the members that it would be very difficult for a field official to determine the suitability of load cells in a device where some of the levers had been removed and load cells had been substituted. The multiple of the scale at the load cell point would be very hard to determine. There was general consensus that anything beyond placing a load cell at the steelyard end of a transverse lever is a modification of type and that that device could not be covered by the Certificate of Conformance without additional testing.

Conclusion: The Sector agreed that replacing any levers of a mechanical weighing element with load cells is a modification of type requiring NTEP evaluation in order to be covered by an NTEP Certificate of Conformance. Additional language will be added to Section "E" paragraph 1 on page 1-15, Pub 14 as follows.

E. Modification of Type

1. Replacing a Lever System with Load Cells. Changing a scale from a lever system to a full electronic scale in order to be covered by an NTEP Certificate of Conformance. Total replacement of any levers in a mechanical scale is a modification of type that is not covered by the original CC without additional testing.

Note: The placement of a load cell in the steelyard rod to change from a mechanical to an electronic indicator is an acceptable modification of type that does not require evaluation for an existing Certificate of Conformance to apply; however, the modification option does need to be listed on the NTEP CC.

30) Load Cell Creep

Source: John Elengo (Consultant)

Background: John Elengo (Consultant) submitted a proposal to change the required test in Publication 14 for load cell creep as outlined in the proposal shown in Appendix M. The proposal would bring the procedure in Publication 14 into harmony with the test requirement for load cell creep in OIML R60.

NIST-OWM suggested that the proposed procedure be adopted for future testing of load cell creep during the NTEP evaluation and included in the next edition of Publication 14.

Discussion: The Sector discussed the differences in the creep requirements of NIST Handbook 44 and OIML R60. The NTEP creep test is based on Handbook 44 paragraph T.N.4.5, **Time Dependence**, test of one hour. The R60 test for creep is based on a 30-minute test. The Sector Technical Advisor Dick Suiter (NIST-OWM) presented information

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demonstrating that the most significant creep in a load cell happens well within the first 30 minutes after application of a load. It was generally agreed that if a load cell met R60 requirements it would also meet Handbook 44.

Conclusion: The Sector agreed that a successful creep test conducted in accordance with OIML R60 requirements shall be accepted as equivalent to a successful creep test conducted in accordance with NTEP requirements.

31) Load Cells Marked "S" (Single Cell Application) in Multiple Cell Applications

Background: Load cells to be used in single cell applications are required to meet a more stringent tolerance than those to be used in multiple cell applications. Consequently, it has been the policy of NTEP to approve the use of load cells approved for single cell applications for use in multiple cell applications without additional testing. It was pointed out that there needed to be an addition to Handbook 44 for the use by field inspectors to support that policy.

NIST-OWM proposed that, unless the Sector objected, the proposal to modify Note 7 of Table S.6.3.b. found in Appendix N be forwarded to the S&T Committee for consideration at the January 1999 NCWM Interim Meeting.

Discussion: It was pointed out that the note should included the "S" designation for Single and "M" for multiple since that is what is actually marked on the load cells.

Conclusion: The Sector agreed to forward the following proposal to the S&T Committee.

Modify Table S.6.3.b. Note 7 as follows:

7. Denotes compliance for single or multiple load cell applications. It is acceptable to use a load cell with the "S" (single cell) designation in multiple load cell applications as long as all other parameters meet requirements. A load cell with the "M" (multiple cell) designation can be used only in multiple load cell applications. [Nonretroactive as of January 1, 1988]

32) Selection of Load Cells to Represent a Family when Mid-Range Falls Outside of NTEP Test Capability

Source: NIST-OWM

Background: On several occasions, a manufacturer has submitted a request for a family of cells in which the mid-range capacity is outside of NTEP test capability. For example, NTEP cannot currently test cells between 555 lb and 4000 lb. If the mid-range of the family requested falls between 555 lb and 4000 lb, NTEP must determine how to minimize testing while selecting cells which still adequately represent the entire family of cells.

Of particular concern are multiple cell applications and applications for a large number of divisions.. For multiple cell applications, the manufacturer is required to submit two cells of each capacity selected for testing; for cells with a large number of divisions (5000 or more), two cells of the same capacity or one cell of the selected capacity and one cell of a different capacity must be submitted for testing. If a mid-range cell cannot be tested, must the manufacturer submit two cells of each capacity? To require two cells of two different capacities only because NTEP is not able to test in the midrange seems to penalize the manufacturer; however, NTEP must still have sufficient test information on which to base a CC.

A reasonable compromise to address this scenario is to apply the rules that are applied to cells with a large number of divisions. This would give NTEP an indication of performance at two different capacities as well as providing testing of two cells from the family.

NTEP has applied an *ad hoc* policy as follows:

If a mid-range cell cannot be tested due to lack of NTEP test capability, then one cell from the low end of the capacities requested and one from the high end of the capacities requested must be submitted. The total range requested must not exceed a range of 10:1.

NTEP proposed that unless the Sector objected, NTEP continue to follow this policy and an appropriate addition be added to Publication 14.

Discussion: There were no negative comments from the Sector on this item.

Conclusion: The Sector agreed to add the following statement to Publication 14, Load Cells, part D(3)(b) to explain how NTEP will address applications in which NTEP does not have test equipment to test cells in the mid-range of a family of cells.

If a mid-range cell cannot be tested due to lack of NTEP test capability, then one cell from the low end of the capacities requested and one cell from the high end of the capacities requested must be submitted. The total range requested must not exceed a range of 10:1.

33) Number of Load Cells to be Submitted for Evaluation for Single Cell Classification with a High Number of Divisions

Source: NIST-OWM

Background: NTEP was questioned as to the number of load cells required to be submitted for type evaluation when the family of load cells covers a range of capacities greater than 10:1 and the cells can be used in single cell applications with a maximum number of divisions greater than or equal to 5000. The specific concern is with the interpretation of the guidelines in the Publication 14 Checklist for Load Cells Section D, paragraphs 3.b. and 3.c. NIST-OWM believes these guidelines may have been developed for load cells with large numbers of divisions used in multiple cell applications, rather than single cell applications. An example is included in Appendix O to demonstrate how NTEP interprets the guidelines in paragraphs 3.b. and 3.c.

The Sector was asked to provide input on the proper interpretation of paragraphs 3.b. and 3.c. in order to determine the required number of cells to be submitted for testing.

Discussion: Ken Yee (NIST) provided written comments to the Sector on this item. It is his opinion that it is difficult for a load cell manufacturer to build Class IIIL, 10 000-division load cells for single cell applications that meet the requirements of NIST Handbook 44. He thinks it is appropriate to test more than one cell for this application. Steve Cook (CA) gave an example where two Class IIIL “Single” Cells with greater than 5000 divisions have been submitted for test and one cell passed and one failed. The Sector agreed, based on comments received, that it is appropriate to require at least two cells to be submitted for cells with 5000 or more divisions.

Conclusion: The Sector agreed that the following changes should be made to part D(3)(c).

c. Large Number of Divisions. If a large number of divisions (e.g., class III, single cell, 5000 divisions and greater; or class IIIL, single cell, 5000 divisions and greater) is requested, one more cell capacity or more cells at the same capacity will be tested. This criterion applies independently of capacities selected to satisfy the range of capacities requirements listed in part D(3)(b).

For example, consider a Class IIIL, Single, 5000 division application with capacities ranging from 1000 lb to 10 000 lb. To satisfy the range of capacity requirements, the manufacturer selects a 5000-lb capacity cell for test; the 5000-lb capacity is mid-range of the 10:1 range of capacities requested. Under the large number of divisions requirements, two 5000-lb capacity cells may be submitted. Alternatively, one 5000-lb capacity cell and another cell from the capacity range between 1000 lb and 10 000 lb may be submitted.

As a second example, consider a Class IIIL, Single, 5000 division application with capacities ranging from 1000 lb to 100 000 lb. To satisfy the range of capacity requirements, the manufacturer selects a 5000-lb capacity cell and a 40 000-lb capacity cell for test. The 5000-lb capacity cell is midrange between the 10:1 range of 1000 to 10 000 lb and nearly 4:1 from either extreme (NTEP does not have the ability to test a 4000-lb cell; the 40 000-lb capacity is midrange between the 10:1 range of 10 000 lb to 100 000 lb and within 4:1 from either extreme. Under the large number of division requirements, two of each cell capacity are required. Alternatively, the manufacturer may select one midrange capacity cell and an additional cell of a different capacity from within each 10:1 range.

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34) Year 2000 (Y2K) Compliance Requirements and Test Procedures

Source: NIST-OWM

Background: There is a concern as to whether or not microprocessor-based devices submitted for NTEP Evaluation will continue to perform in compliance with Handbook 44 requirements at the beginning of the year 2000. Measurement Canada has developed comprehensive compliance requirements along with laboratory test procedures for verifying continued compliance of a device after the year 2000.

Copies of the Canadian procedures were provided to the Sector at its October meeting, and the Sector was asked to review them for possible inclusion in Publication 14. The decision of the Measuring Sector on this issue at its September 1998 meeting was to authorize the NTEP Laboratories to use the Measurement Canada test procedures when conducting tests for Y2K compliance of a device with Handbook 44 and Publication 14.

Discussion: Several manufacturers indicated that they have taken steps to assure that devices produced by their companies will continue to comply with all requirements after January 1, 2000. Manufacturers present thought there would be no problems discovered if the NTEP Laboratories conducted testing to verify compliance; however, there was a concern that the testing would involve substantial additional charges. It was generally agreed that the NTEP laboratories could do at least some testing to verify compliance without adding a lot of additional evaluation time.

Conclusion: The Sector agreed that the Labs should review the Measurement Canada procedure and apply it to devices submitted for mutual recognition. For devices submitted for NTEP evaluation only, the assigned laboratory should work with the manufacturer on a case-by-case basis to ensure continued compliance with Handbook 44 requirements after the year 2000.

**National Type Evaluation Technical Committee – Weighing Sector
October 6-7, 1998 Sacramento, CA
Attendance List**

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Report of the Resolutions Committee

Robert Alviene
Morris County Weights and Measures
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Reference
Key No.

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GENERAL

The Resolutions Committee thanks the members of the National Conference on Weights and Measures who contributed their time and talents for arranging the conduct and success of this 84th Annual Meeting. Thank you to the following people:

- (1) Leon C. Graves, Commissioner of the Vermont Department of Agriculture, Food & Markets, for his enthusiastic welcome to the participants and guests of the NCWM; and for his account of the development and growth of the State of Vermont;
- (2) Consumer Assurance Division of the Vermont Department of Agriculture, Food & Markets, particularly Bruce Martell and his staff, for the hospitality extended to the Conference and assistance in preparing and conducting the Annual Meeting;
- (3) Sergeants-at-Arms, James Cameron and Marc Paquette, Consumer Assurance Division, Vermont Department of Agriculture, for their assistance during Conference sessions;
- (4) the members of the Vermont National Guard for presenting the colors during the opening of the General Session;
- (5) John Birch, Director, National Standards Commission, Sydney, Australia, for his discussion of legal metrology issues in the Asian-Pacific Region;
- (6) Ray Kammer, Director of the National Institute of Standards and Technology (NIST), for his remarks to the membership outlining the many challenges being met by the agency and his description of the NIST approach to promoting global trade; for his assurances that NIST will see to it that U.S. industry has the best measurements and standards in the world; for his discussion of the NIST partnership with the State of Maine, the first in a pilot program designed to expand the NIST alliance with the States; for discussing the NIST budget initiative which would include funding for an educational facility for training of weights and measures personnel, industry, and international groups; (1) for continuing the important instructor training courses; (2) for research on new weights and measures technology; and (3) for regular recalibration of State primary standards; all of which indicate a bright future for continuation of the NIST partnership with NCWM;
- (7) Aves D. Thompson and the officers and appointed officials of the National Conference on Weights and Measures for their leadership and dedicated service on the issues of the Conference, as well as their outstanding officiation and administration of the activities of this 84th Annual Meeting;
- (8) committee members for their efforts throughout the past year preparing and presenting their reports; the subcommittees and work groups for their discerning and appropriate recommendations;
- (9) regulatory officials of State and local jurisdictions for the advice, interest, and support of weights and measures administration in the United States;
- (10) representatives of business and industry for their cooperation and assistance in committee and Conference work, especially the continuing support as demonstrated by granting scholarships for training; the associate membership organization for the hospitality exhibited in sponsoring social functions; particularly to Gale Prince, the Kroger

Resolutions Committee

Company, for arranging the enjoyable outing on Lake Champlain aboard the Spirit of Ethan Allen II;

- (11) retired NCWM membership for continued support of the work of the NCWM and participation in these Annual Meetings.
- (12) staff of the Sheraton Burlington Hotel and Conference Center for assistance and courtesies, all of which contributed to the success of this Annual Meeting;
- (13) NCWM Headquarters staff for dedicated assistance in planning and conducting the work and program of this Annual Meeting, especially to Beth Palys, Kristine Freund, and Lynn DiTizio for their professional and hospitable conduct of the administrative operations of the meeting;
- (14) National Institute of Standards and Technology Office of Weights and Measures Technical Advisors, staff, Phillip Bryson, and Gil Ugiansky, OWM Chief and NCWM Executive Secretary, for their participation and continued support of the work of the NCWM and its constituency.

R. Alviene, Chairman, Morris County, NJ, Weights and Measures
D. Cripe, Stanislaus County, CA, Weights and Measures

J. Mindte, NIST, Coordinator

Resolutions Committee

Report of the Nominating Committee

Steven A. Malone, Chairman
Director, Division of Weights and Measures
Nebraska Department of Agriculture

Reference
Key No.

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The Nominating Committee met during the Interim Meeting at the Sheraton Old Town Hotel, Albuquerque, New Mexico, at which time the Committee nominated the persons listed below to be officers of the 85th National Conference on Weights and Measures. In the selection of nominees from the Active membership, consideration was given to professional experience, qualifications of individuals, Conference attendance and participation, and other factors considered to be important.

The following slate of officers was selected by unanimous vote of the Nominating Committee:

CHAIRMAN-ELECT: Louis E. Straub, State of Maryland

BOARD OF DIRECTORS
NORTHEAST REGION: Ross J. Andersen, State of New York

TREASURER: J. Alan Rogers, State of Virginia

- S. Malone, Nebraska, Chairman
- B. Bloch, California
 - S. Colbrook, Illinois
 - C. Gardner, Suffolk County, New York
 - T. Geiler, Barnstable, Massachusetts
 - N. D. Smith, North Carolina
 - J. Truex, Ohio

Nominating Committee

G. Weston Diggs
Program Supervisor, Office of Product and Industry Standards
Richmond, Virginia

It is with pride, I begin my responsibilities as Chairman of the National Conference on Weights and Measures. I would like to thank the Conference for this honor in allowing me to serve as your Chairman as we go into a new millennium.

I would like to introduce your New Chairman Elect, Lou Straub, Chief of the Office of Weights and Measures, Maryland Department of Agriculture. I would also like to introduce Frances Holland, who is the new Chairman of the Associate Membership Committee. Both Lou and Frances have been very active members in the Conference in the past; I look forward to working with them in the coming year.

There have been many changes to the National Conference on Weights and Measures in the almost one hundred years since its inception in 1905. The Conference has faced and been able to resolve many difficult issues over the years. Many times, we have disagreed with one another over issues. These disagreements have been professional in nature and were resolved because we worked together in the best interest of the Conference, its members, and the citizens we represent.

I believe the Conference needs to get back to basics. That is why I have selected as our theme for this year "Basic Standards - Building the Foundation for a New Millennium." During my 33 year career in weights and measures, I spent my first 14 years as a field inspector checking packages and small capacity weighing and measuring devices. Since then I have been responsible for providing technical support to field inspectors and industries that operate in Virginia. I attended my first Conference in 1967, and I have seen many changes since then in the way the Conference and the NIST Office of Weights and Measures operate. I have witnessed what I believe is a shift in priorities. Over the last several years both the Conference and our NIST partner have become involved in global weights and measures. Without minimizing the importance of our global responsibilities in weights and measures, I believe we need to get back to the basic foundation that has made our system what it is.

Nothing works well without a good foundation. At a recent meeting with industry and weights and measures officials, one of our most respected industry officials described our weights and measures system as being "third rate" when compared to other weights and measures systems in the world. I was surprised, and it has caused me a great deal of concern. There is no question that our system is unique. We have 747 weights and measures jurisdictions in the United States; less than half of these are members of the Conference. We need to get back to basic standards and build a strong foundation as we move into the new millennium.

Over the next year, the Conference, through its Board of Directors, will be working on several issues that may have a long-term effect on our organization.

The reorganization and rewrite of Handbook 44 is one of the major issues that needs to be addressed. Handbook 44 is one of the most important products of the National Conference on Weights and Measures. The last major revision of the handbook was in 1949. Since then, many additions and revisions have been made to individual codes. Many of the users of the handbook believe it is outdated and needs to be reorganized and rewritten. Many of the requirements in the specific codes relate to mechanical devices. Most of the devices we deal with in today's world are electronic. Generally, the users of the handbook agree it is not clearly written and leaves too much to interpretation. For that reason, I have made the reorganization of Handbook 44 a priority project. I have asked Ron Murdock to chair a committee that will make recommendations on how the handbook should be reorganized and rewritten. I believe this will be a long-term project and to successfully complete it will require a major commitment on the part of the Conference.

The copyright of handbooks developed through the Conference is another priority project for next year. Much of the Conference's resources in both time and money go to the development and publication of NIST/NCWM publications. It would seem prudent for the Conference to be in a position to protect these documents from misuse and insure the NCWM can receive compensation for these publications when deemed appropriate.

This year at our Annual Meeting, we have discussed major changes to the National Type Evaluation Program (NTEP). Aves Thompson, as Chairman of the NTEP Committee, will be working on revisions to the NTEP Policy to reflect the needed changes.

New Chairman's Address

The issue of remanufactured equipment needs to be resolved. This is a Handbook 44 and NTEP issue. From the standpoint of NTEP, this is a production meets type issue. I cannot rationalize how a device can remain traceable to an NTEP Certificate of Conformance if it has been significantly altered by a third party. I expect Jim Truex and his committee will have recommendations by next year's Interim Meeting and something the Conference can vote on by the 2000 Annual Meeting.

Tom Geiler has been working with the NCWM headquarters staff on developing a brochure that will tell the story of weights and measures in the United States. The brochure will explain how the Conference fits into the process and its impact on weights and measures both nationally and internationally. The brochure is something that we can give to legislators or their aides at all levels of government thereby providing them with more details about our Conference activities than can be covered in a short meeting. I would be remiss if I did not acknowledge the Associate memberships' monetary contribution in developing this brochure.

In recent years, we have seen the Conference's relationship with the National Institute of Standards and Technology (NIST) Office of Weights and Measures (OWM) change. The change was brought about because it was determined some of the activities the NIST Office of Weights and Measures was providing to the Conference were inappropriate and needed to be discontinued. As you know, the Conference incorporated in 1998 in order to protect the organization and its officers against any personal liability. We also hired a management group to handle the day-to-day operation of the Conference. I am sure if you have had the opportunity to deal with the NCWM, Inc., staff, you have found them be helpful and professional.

One of the many things our headquarters staff has been doing is helping the Board of Directors to become better financial managers by being able to better understand the true cost of operating the National Conference on Weights and Measures, Inc. For example, the membership for a weights and measures official is \$35.00. The average cost of supporting that official is approximately \$85.00. This does not mean that the Board is going to raise dues. However, we are running a business, and the Board must continually look at the way we do things and make changes when necessary. We cannot afford to continue do things just because it's the way we've always done them.

As Conference Chairman, one of my responsibilities is the appointment of members to serve on committees. It is the commitment of these committee members and volunteers that make our organization successful.

In 1997, Steve Malone talked about a sign in his office and the people who make things happen. Well, I also have a sign in my office and it reads:

Are you a Winner or a Loser?

The Winner is always part of the answer;

The Loser is always part of the problem.

The Winner always has a plan;

The Loser always has an excuse.

The Winner says "Let me do it for you";

The Loser says "That's not my job."

The Winner sees an answer for every problem;

The Loser sees a problem in every answer.

The Winner says, "It may be difficult, but it's possible";

The Loser says, "It may be possible, but it's too difficult."

BE A WINNER.

From the desk of B. Spencer, February 1988

The individuals that I am about to appoint are among those who are winners. They have made the commitment in time and effort to serve on the various committees. I am proud to appoint the following:

I am asking Tom Geiler of Barnstable, Massachusetts to continue as Chairman of the Legislative Liaison Committee with N. David Smith of North Carolina and Bill Corey of American Frozen Foods, as committee members. This committee is charged with building upon and renewing our relationships with the Department of Commerce, National Institute of Standards and Technology, and Congress. In the future, it may be necessary to ask our Congressional Representatives to assist us in furthering the goals of the Conference.

Ron Murdock, North Carolina, 2 years to fill Lou Straub's term as Lou assumes his new duties as Chairman Elect.

New Chairman's Address

To the Specification and Tolerance Committee: Constantine V. Cotsoradis, Kansas, 5 years.

To the Laws and Regulations Committee: Pat D'Errico, New Jersey, 5 years, to replace Ross Andersen and Dennis Johannes, California, 5 years, to replace Karl Angell.

To the Administration and Public Affairs Committee: Steve Hadder, Florida, 5 years.

I will be making other appointments prior to the Interim Meeting.

In closing, I would like to make some observations. As I mentioned, the Conference has and still is experiencing growing pains since its incorporation. Both the Conference and our NIST partners have been forced into new rolls with new challenges and opportunities. We have seen many changes. Some of these changes have been beyond the control of the Conference or the NIST Office of Weights and Measures. In the coming year, we will be facing some serious challenges, and we are going to need serious and dedicated people working together to solve them. This Conference never has and never will support persons or organizations who put self-interest above that of the Conference and the weights and measures system in this country. We have all talked about and promised cooperation in the coming year, but I would remind you, we will be judged by our actions and deeds.

Again, I would like to express my appreciation for allowing me this honor of being your Chairman. I look forward to seeing you at the January Interim Meeting in Bethesda, MD. and at our next Annual Meeting in Richmond, VA.



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