

NATIONAL CONFERENCE ON WEIGHTS AND MEASURES



Interim Meeting Agenda January 21 - 24, 2007 Omni Jacksonville Jacksonville, FL



NATIONAL CONFERENCE ON WEIGHTS AND MEASURES



Interim Meeting of the 92nd NCWM

January 21 - 24, 2007 Omni Jacksonville Hotel Jacksonville, Florida

> NCWM Publication 15



National Conference on Weights and Measures

Interim Meeting of the 92nd NCWM

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*Drafts of the sector summaries can be viewed at - http://www.ncwm.net/ntep/index.cfm?fuseaction=news

National Conference on Weights and Measures, Inc. (NCWM) Organization Chart 2006/2007

F

NCWM Board of Directors				
Office Represe	entation Na	me/Affiliation		Term Expires
Chairman:Michael Cleary, CA*2007Chairman-Elect:Judy Cardin, WI*2007NTEP Committee Chair:Don Onwiler, NE*2007Treasurer:Will Wotthlie, MD2007Active Membership/Northeastern:Charles Carroll, MA*2009Active Membership/Central:Steven Malone, NE2010Active Membership/Central:Steven Malone, NE2010Active Membership/Southern:Randy Jennings, TN*2008Active Membership/Western:Joe Gomez, NM2007At-Large:Lack Kane, MT2011Associate Membership:Darrell Flocken, Mettler-Toledo2007*National Type Evaluation Program (NTEP) Committee Member		2007 2007 2007 2007 2009 2010 2008 2007 2008 2007 2008 2011 2007		
Honorary NCWM President:Dr. William A. Jeffrey, NIST DirectorNCWM Executive Secretary:Carol Hockert, Chief, NIST W&M DivisionNCWM Executive Director:Beth Palys, CAE, NCWM HeadquartersBOD Advisor:Gilles Vinet, Measurement CanadaNTEP Director:Stephen Patoray, NCWM HeadquartersNTEP Committee Technical Advisor:Steven Cook, NIST W&M Division			on	
	NCWM (Committees	5	
Laws	& Regulations Committee	Specificat	ions & Tolerance	s Committee
Position	Name/Affiliation (Term Expires)	Position	Name/Affiliation (7	Term Expires)
Chair:	James Cassidy, MA (2007)	Chair:	Michael Sikula, NY	(2007)
Members:	Vicky Dempsey, OH (2008) Roger Macey, CA (2009) Stephen Benjamin, NC (2010) Joe Benavides, TX (2011)	Members:	Carol Fulmer, SC (2 Todd Lucas, OH (20 Brett Saum, CA (20 Kristin Macey, CO (008))09) 10) (2011)
Associate Member Rep:	Vincent Orr, ConAgra Foods	Associate Member Rep:	TBD	
Canadian Tech Advisors:	Doug Hutchinson Brian Lemon	Canadian Tech Advisor:	Ted Kingsbury	
NIST Tech. Advisors:	Thomas Coleman	NIST Tech. Advisors:	Richard Suiter Juana Williams	

NCWM Committees (Continued)				
Professional Development Committee Metrology			trology Committee	
Position	Name/Affiliation (Term Expires)	Position	Name/Affiliation (Term Expires)	
Chair:	Agatha Shields, OH (2007)	Chair:	TBD	
Members:	Kenneth Deitzler, PA (2007) Ross Andersen, NY (2007) John Sullivan, MS (2011) Stacy Carlsen, CA (2011) Tina Butcher, NIST (2011)	Co-Chair: Members:	TBD	
Safety Liaison:	Charles Gardner, NY			
Staff Liaison:	Linda Bernetich, NCWM			
Associate Member Rep:	Michael Sarachman, Kraft Foods Global, Inc.	NIST Tech Advisor:	Val Miller	
Non	ninating Committee	Le	gislative Liaison	
Chair:	Don Onwiler, NE	Chair:	TBD	
Members:	Dennis Ehrhart, AZ Ross Andersen, NY Maxwell Gray, FL Thomas Geiler, MA Steven Malone, NE James Truex, OH	Members:	TBD	
Credentials Committee		Aµ	ppointed Officers	
Chair:	William Cobb, WV (2007)	Parliamentarian:	Lou Straub, Fairbanks Scales, Inc.	
Members:	Mark Buccelli, MT (2008) Raymond Johnson, NM (2011)	Chaplain:	F. Michael Belue, Belue Associates	
Coordinator:	Linda Bernetich, NCWM Staff	Sergeants-At- Arms:	TBD TBD	
		Presiding Officers:	Manual Villicana, CA Brett Gurney, UT Kirk Robinson, WA Tim Chesser, AR	
	Associate Membe	ership Committee		
Chair:	Chair: Stephen Langford, Cardinal Scale (2007)		ardinal Scale (2007)	
Vice Chair:	ice Chair: Vincent Orr, ConAgra Foods (2008)		ra Foods (2008)	
Secretary/Treasur	·er:	Paul Lewis, Rice Lak	te Weighing Systems (2009)	
Members:		William Sveum, Kraft Foods (2007) Darrell Flocken, Mettler-Toledo (2008) Cary Frye, International Dairy Foods Assoc. (2008) Paul Lewis, Rice Lake Weighing Systems (2009) Michael Gaspers, Farmland Foods, Inc. (2009) Christopher Guay, Procter and Gamble (2010)		

National Type Evaluation Technical Committees (NTETC)				
NTETC Weighing Sector	NTETC Measuring Sector			
Darrell Flocken, Mettler-Toledo	Chair:	Michael Keilty, Endress & Hauser Flowtec AG		
Steven Cook, NIST/WMD	Technical Advisor:	Richard Suiter, NIST/WMD		
Cary Ainsworth, GIPSA Ross Andersen, NY William Bates, GIPSA Andrea Buie, MD Luciano Burtini, Measurement Canada Tina Butcher, NIST/WMD Gary Castro, CA Terry Davis, KS Ken Jones, CA Jack Kane, MT Don Onwiler, NE James Truex, OH Juana Williams, NIST/WMD Russ Wyckoff, OR Doug Biette, Sartorius North America John Elengo, Contractor Robert Feezor, Norfolk Southern Corp. David Hawkins, Thurman Scale Co. Scott Henry, NCR Rafael Jimenez, Association of American Railroads Gary Lameris, Lameris Consulting Stephen Langford, Cardinal Scale Mfg. Paul Lewis, Rice Lake Weighing Systems L. Edward Luthy, Brechbuhler Scales, Inc. Nigel Mills, Hobart Corporation Naresh Puri, NMB Technologies, Inc. David Quinn, Weighing Consultants, Inc. Lawig Straub Egizbanka Sanka Ing	Advisor: Public Sector Members: Private Sector Members:	Ross Andersen, NY Tina Butcher, NIST/WMD Jerry Butler, NC Gary Castro, CA Steve Hadder, FL Ted Kingsbury, Measurement Canada John Makin, Measurement Canada Steven Malone, NE Don Onwiler, NE Dan Reiswig, CA Richard Wotthlie, MD F. Michael Belue, Belue Associates Marc Buttler, Emerson Process Management - Micro Motion Joe Buxton, Daniel Measurement & Control Rodney Cooper, Actaris Neptune Maurice Forkert, Tuthill Transfer Systems Mike Gallo, Clean Fueling Technologies Paul Glowacki, Murray Equipment Alex Gutierrez, MEGGITT Fueling Products, Whittaker Controls Melvin Hankel, MCH Engineering Assoc. David Hoffman, TopTech Systems Gordon Johnson, Gilbarco, Inc. Yefim Katselnik, Dresser Wayne, Inc. Douglas Long, RDM Industrial Electronics		
Jerry Wang, A&D Engineering, Inc. Otto Warnlof, Consultant William West, Consultant Nathaniel Wieselquist, Sick, Inc. Walter Young, Emery Winslow Scale		 Wade Mattar, Invensys/Foxboro Richard Miller, FMC Measurement Solution Robert Murnane, Jr., Seraphin Test Measure Andre Noel, Neptune Technology Charlene Numrych, Liquid Controls Johnny Parrish, Brodie Meter Company, LLC David Rajala, Veeder-Root Company Otto Warnlof, Consultant 		
	National Type Evaluation Te NTETC Weighing Sector Darrell Flocken, Mettler-Toledo Steven Cook, NIST/WMD Cary Ainsworth, GIPSA Ross Andersen, NY William Bates, GIPSA Andrea Buie, MD Luciano Burtini, Measurement Canada Tina Butcher, NIST/WMD Gary Castro, CA Terry Davis, KS Ken Jones, CA Jack Kane, MT Don Onwiler, NE James Truex, OH Juana Williams, NIST/WMD Russ Wyckoff, OR Doug Biette, Sartorius North America John Elengo, Contractor Robert Feezor, Norfolk Southern Corp. David Hawkins, Thurman Scale Co. Scott Henry, NCR Rafael Jimenez, Association of American Railroads Gary Lameris, Lameris Consulting Stephen Langford, Cardinal Scale Mfg. Paul Lewis, Rice Lake Weighing Systems L. Edward Luthy, Brechbuhler Scales, Inc. Nigel Mills, Hobart Corporation Naresh Puri, NMB Technologies, Inc. David Quinn, Weighing Consultants, Inc. Louis Straub, Fairbanks Scales, Inc. Jerry Wang, A&D Engineering, Inc. Otto Warnlof, Consultant William West, Consultant Nathaniel Wieselquist, Sick, Inc. Walter Young, Emery Winslow Scale	National Type Evaluation Technical CNIETC Weighing SectorDarrell Flocken, Mettler-ToledoChair:Steven Cook, NIST/WMDTechnical Advisor:Cary Ainsworth, GIPSA Ross Andersen, NY William Bates, GIPSA Andrea Buie, MD Luciano Burtini, Measurement Canada Tina Butcher, NIST/WMD Gary Castro, CA Terry Davis, KS Ken Jones, CA Jack Kane, MT Don Onwiler, NE James Truex, OH Juana Williams, NIST/WMD Russ Wyckoff, ORPublic Sector Members:Doug Biette, Sartorius North America John Elengo, Contractor Robert Feezor, Norfolk Southern Corp. David Hawkins, Thurman Scale Co. Scott Henry, NCR Rafael Jimenez, Association of American Railroads Gary Lameris, Lameris Consulting Stephen Langford, Cardinal Scale Mfg. Paul Lewis, Rice Lake Weighing Systems L. Edward Luthy, Brechbuhler Scales, Inc. Nigel Mills, Hobart Corporation Naresh Puri, NMB Technologies, Inc. David Quinn, Weighing Consultants, Inc. Louis Straub, Fairbanks Scales, Inc. Jerry Wang, A&D Engineering, Inc. Otto Warnlof, Consultant William West, Consultant Nathaniel Wieselquist, Sick, Inc. Walter Young, Emery Winslow ScalePrivate Scale		

Natio	National Type Evaluation Technical Committees (NTETC) Continued			
N	TETC Software Sector	NTE	TC Grain Analyzer Sector	
Chair:	Jim Truex, OH	Chair:	Cassie Eigenmann, DICKEY-john Corp.	
Technical Advisor:	Stephen Patoray, NCWM	Technical Advisors:	G. Diane Lee, NIST/WMD John Barber, J. B. Associates	
Public Sector Members:	Dennis Beattie, Measurement Canada Andrea Buie, MD Bill Fishman, NY Mike Frailer, MD Norman Ingram, CA Todd Lucas, OH Don Onwiler, NE John Roach, CA Wayne Stiefel, NIST	Public Sector Members:	Randy Burns, AR Tina Butcher, NIST/WMD Don Onwiler, NE Richard Pierce, GIPSA Edward Szesnat, Jr., NY Cheryl Tew, NC Robert Wittenberger, MO	
Private Sector Members:	 Doug Bliss, Mettler-Toledo George Brazis, Avery Weigh-Tronix André Elle, Endress & Hauser Flowtec AG Travis Gibson, Rice Lake Weighing Systems Teri Gulke, Liquid Controls LLC Keith Harper, Gencor Industries, Inc. Bryan Haynes, Liquid Controls Tony Herrin, Cardinal Scale Mfgr. Co. Robert Hoblit, IBM David Hoffman, Toptech Systems, Inc. Gordon Johnson, Gilbarco, Inc. Gary Lameris, Lameris Consulting Paul Lewis, Rice Lake Weighing Systems Mike McGhee, Actaris US Liquid Measurement Richard Miller, FMC Measurement Solutions Tim Morrison, KJM Software Charlene Numrych, Liquid Controls LLC Michael Parks, Vulcan Materials Co. Jim Pettinato, FMC Measurement Solutions Mike Roach, Verifone Robin Sax, CompuWeigh Corp. Jim Sexton, Rice Lake Weighing Systems Chris Scott, Gilbarco, Inc. David Vande Berg, Vande Berg Scales Roland Wagner, Flow Measurements & Engineering GmbH Kevin Williams, Gilbarco, Inc. Nathaniel Wieselquist, Sick, Inc 	Private Sector Members:	James Bair, NA Miller's Association Martin Clements, The Steinlite Corp. Victor Gates, Shore Sales Company Andrew Gell, Foss North America Charles Hurburgh, Jr., Iowa State University David Krejci, Grain Elevator & Processing Society John Kennedy, Perten Instruments Thomas Runyon, Seedboro Equipment	

National Type Evaluation Technical Committees (NTETC) Continued			
NTETC Belt Conveyor Sector			
Chair:	TBD		
Technical Advisor:	Steven Cook, NIST/WMD		
Public Sector Members:	Andrea Buie, MD		
Private Sector Members:	Rafael Jimenez, Association of American Railroads Lars Marmsater, Merrick Industries Bill Ripka, Thermo Electron Peter Sirrico, Thayer Scale - Hyer Industries, Inc. Tom Vormittag, Sr, SGS Minerals Services Otto Warnlof, Consultant		

Regional Weights and Measures Associations

Regional Weights and Measures Contacts

Northeastern Weights and Measures Assn. (NEWMA):	Bill Timmons
Annual Meeting 2007: May 14 - 17	City of Medford
Springfield Marriott	(781) 589-7011
Springfield, MA	mwtimmons@medford.org
Southern Weights and Measures Assn. (SWMA):	Richard (Will) Wotthlie
Annual Meeting 2006: October 22 - 25	Maryland Department of Agriculture
Doubletree Hotel Annapolis	(410) 841-5790
Annapolis, MD	wotthlrw@mda.state.md.us
Central Weights and Measures Assn. (CWMA) :	Julie Quinn
Annual Meeting 2007: April 29 - May 2	Minnesota Department of Commerce
Crown Plaza North	(615) 215-5823
Minneapolis, MN	julie.quinn@state.mn.us
Western Weights and Measures Assn. (WWMA):	Brett Gurney
Annual Meeting 2006: September 10 - 14	Utah Department of Agriculture & Food
Radisson Downtown	(801) 538-7158
Salt Lake City, UT	bgurney@utah.gov

Organization Chart

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General Conference Information

Introduction

This document contains the Board of Directors and Standing Committee agendas for the **Interim Meeting of the National Conference on Weights and Measures, Inc.,** (NCWM) scheduled for January 21 - 24, 2007, at the Omni Jacksonville, Florida. To reserve a room, call the hotel directly at (904) 355-6664 and ask for the National Conference on Weights and Measures meeting rate of \$78 single/double – prevailing federal government per diem. The reservation cut-off date is December 21, 2006.

Agenda items to be addressed by the Standing Committees are assigned Reference Key numbers as follows:

Committee	Reference Key	
Board of Directors	100 series	
Laws and Regulations	200 series	
Specifications and Tolerances	300 series	
Professional Development Committee	400 series	
National Type Evaluation Program Committee	500 series	

The subject matter listed on each Standing Committee's agenda will be open for discussion as noted. Each committee may also take up routine or miscellaneous items brought to its attention after the preparation of this document. At its discretion, each committee may decide to accept items for discussion that are not listed in this document.

The agendas:

- 1. Include items brought to the attention of the Standing Committees prior to the submission deadline of November 1, 2006, and approved for inclusion in their agendas by the Committees, and
- 2. Serve as the basis for the Standing Committee Interim Reports (to be printed in the Program and Committee Reports of the National Conference on Weights and Measures 92nd Annual Meeting, NCWM Publication 16). The final reports of the committees will be published in the NIST Special Publication Report of the 92nd Annual Meeting of the NCWM, following the Annual Meeting in 2007, scheduled for July 8 12 at the Snowbird Resort, Salt Lake City, Utah.

The Committees have not determined whether the items presented will be voting or informational in nature; these determinations will result from their deliberations at the Interim Meeting.

Special Meetings

Several Annual Committees and other organizations are conducting meetings concurrently with the Standing Committees of the Conference.

Joint Meetings for All Committees

A joint meeting for all committees will be held on Wednesday, January 24, 2007. Each Standing Committee will highlight the major decisions made during the week, and the Nominating Committee will present its report.

Participation

Sunday meetings are scheduled for Committee members to review their agendas (see the particular committee agenda for details). Although the sessions are open to all delegates, participation in discussions during agenda reviews is normally limited to Committee members. Comments and input are welcome when specific topics are scheduled in the Committee agendas.

All sessions of NCWM meetings are normally open to members of the Conference. If a Committee chairman recognizes a special situation involving a proprietary issue (e.g., NTEP appeals) or sensitive issue or other substantive need, that portion of the session dealing with the special issue may be closed, provided that: (1) the Conference chairman (or in his absence the chairman-elect) approves, and (2) announcement of the closed meeting is posted on or near the door to the meeting session and on the announcement board at the registration desk. If at all possible, the posting will be done at least a day prior to the planned closed session. Please note that the one-day notice will not always be possible if a closed meeting is called on Sunday. Since Sunday is a day for agenda reviews and participants may make their travel reservations in order to observe these agenda reviews, if a closed meeting becomes necessary on Sunday, every effort will be made to limit such a meeting to only part of the day.

To request an appearance with a Standing Committee, contact the appropriate technical advisor by December 31, 2006:

Board of Directors	Chief, Weights & Measures Division	(301) 975-4004
Laws and Regulations Committee	Tom Coleman	(301) 975-4868
Specifications & Tolerances Committee	Juana Williams or	(301) 975-3989
•	Richard Suiter	(301) 975-4406
Professional Development Committee	Agatha Shields	(614) 462-7380
National Type Evaluation Program Committee	Steve Cook	(301) 975-4003

You may also contact the Executive Secretary at the following address and telephone number:

Weights and Measures Division National Institute of Standards and Technology 100 Bureau Drive, STOP 2600 Gaithersburg, MD 20899-2600 Telephone: (301) 975-4004

Contact for More Information

If you have questions about the program, registration, lodging, or meeting arrangements, contact NCWM Headquarters at the following address and telephone number:

National Conference on Weights and Measures 15245 Shady Grove Road, Suite 130 Rockville, MD 20850 Telephone: (240) 632-9454

Reports

There will **not** be a transcript made of the proceedings of the Interim Meetings. Each committee will prepare its report to the NCWM containing its recommendations based upon the presentations, discussions, and deliberations on all matters on its agenda that were addressed during the Interim Meetings. These reports will be published in the Committee Reports for the 92nd Annual Meeting, NCWM Publication 16, to be mailed to the NCWM membership in May 2007.

92nd Annual Meeting of the National Conference on Weights and Measures

The National Conference on Weights and Measures 92^{nd} Annual Meeting will be held at the Snowbird Resort, Salt Lake City, Utah, from July 8 - 12, 2007. The room rate for the Annual Meeting will be \$155 per night (federal government per diem), single or double, plus tax. For reservations, please call the hotel at (312) 836-0100. The reservation cut-off date is Friday, June 9, 2007.

Units of Measurement

In keeping with the provisions of the Omnibus Trade and Competitiveness Act of 1988, which establishes the metric system as the preferred system of measurement for commerce and trade, units of the metric system have been used in this document, except where industry has not yet converted from the inch-pound system. In some instances, proposals are quoted in the Committee agendas; they may appear in inch-pound units only.



2007 NCWM Interim Meeting January 21 - 24, 2007 Omni Jacksonville Hotel ◆ Jacksonville, Florida Schedule of Events (as of November 7, 2006)

Saturday, January 20 8:30 a.m. - 5:00 p.m. **Board of Directors Meeting** Pensacola 6:00 p.m. - 7:00 p.m. **Reception for Board of Directors, Standing Committee** Presidential Suite **Chairs and Technical Advisors** (by invitation only) Sunday, January 21 7:30 a.m. - 9:00 a.m. Morning Coffee Florida Ballroom Foyer 8:30 a.m. - 5:00 p.m. **Registration and Tabletop Exhibits** Florida Ballroom Foyer **OTHER MEETINGS** Industry Committee on Packaging & Labeling Omni Salon B 9:00 a.m. - 11:00 a.m. 11:00 a.m. - 12:00 p.m. Associate Membership Committee Florida Salon A 12:00 p.m. - 1:00 p.m. Lunch on your own JOINT MEETING - ALL STANDING COMMITTEES 1:00 p.m. - 1:30 p.m. STANDING COMMITTEES REVIEW SESSIONS 1:30 p.m. - 5:00 p.m. Board of Directors/NTEP Committee Omni Salon B Laws & Regulations Committee Pensacola **Professional Development Committee** St. Augustine Specifications & Tolerances Committee Jacksonville 5:30 p.m. - 7:00 p.m. Florida Salon D **Chairman's Reception** Monday, January 22 7:30 a.m. - 9:00 a.m. Morning Coffee Florida Ballroom Foyer 7:30 a.m. - 5:00 p.m. **Registration and Tabletop Exhibits** Florida Ballroom Foyer 8:30 a.m. - 12:00 p.m. STANDING COMMITTEES OPEN HEARINGS Florida Salons ABC (Note: Times of hearings are not firm; when one committee finishes, the next committee will begin) Board of Directors/NTEP Committee Laws & Regulations Committee **Professional Development Committee** Specifications & Tolerances Committee Lunch on your own 12:00 p.m. - 1:00 p.m.

Schedule



2007 NCWM Interim Meeting January 21 - 24, 2007 Omni Jacksonville Hotel & Jacksonville, Florida Schedule of Events (as of November 7, 2006)

Monday, January 22 (cont'd)		
1:00 p.m 5:00 p.m.	STANDING COMMITTEES OPEN HEARINGS (Cont'd) (<i>Note: Times of hearings are not firm; when one committee</i> <i>finishes, the next committee will begin</i>) Board of Directors/NTEP Committee Laws & Regulations Committee Professional Development Committee Specifications & Tolerances Committee	Florida Salons ABC
Tuesday, January 23 7:30 a.m 9:00 a.m.	Morning Coffee	Florida Ballroom Foyer
7:30 a.m 5:00 p.m.	Registration and Tabletop Exhibits	Florida Ballroom Foyer
8:30 a.m 9:00 a.m.	PRESENTATION ON TEMPERATURE COMPENSATION <i>F. Michael Belue</i> <i>President, Belue Associates</i>	Florida Salons ABC
9:00 a.m 9:30 a.m.	BIODIESEL REGULATORY MODEL Jason Hoar President, Agrifuels National Biodiesel Board	Florida Salons ABC
9:30 a.m 12:00 p.m.	STANDING COMMITTEES OPEN HEARINGS (<i>Note: Times of hearings are not firm; when one committee finishes, the next committee will begin</i>) Board of Directors/NTEP Committee Laws & Regulations Committee Professional Development Committee Specifications & Tolerances Committee	Florida Salons ABC
12:00 p.m 1:00 p.m.	Lunch on your own	
1:00 p.m 5:00 p.m.	STANDING COMMITTEES WORK SESSIONS Board of Directors/NTEP Committee Laws & Regulations Committee Professional Development Committee Specifications & Tolerances Committee	Omni Salon B Pensacola St. Augustine Jacksonville

2007 NCWM Interim Meeting January 21 - 24, 2007 Omni Jacksonville Hotel ♦ Jacksonville, Florida Schedule of Events (as of November 7, 2006)

Wednesday, January 24		
7:30 a.m 9:00 a.m.	Morning Coffee	Florida Ballroom Foyer
8:30 a.m 11:00 a.m.	STANDING COMMITTEES WORK SESSIONS	
	Board of Directors/NTEP Committee	Pensacola
	Laws & Regulations Committee	Omni Salon A
	Professional Development Committee	Naples
	Specifications & Tolerances Committee	Jacksonville
11:00 a.m 12:00 p.m.	JOINT MEETING – ALL STANDING COMMITTEES	Florida Salon C
	NOTE: 2007 Interim Meeting schedule of events is tentative and subject to change.	

Schedule

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Board of Directors Interim Agenda

Don Onwiler Program Manager, Division of Weights and Measures Nebraska Department of Agriculture

INTRODUCTION

The Board will hold its quarterly Board of Directors meeting on Saturday, January 20, 2007, and continue that meeting during work periods throughout the remainder of the Interim Meetings. Except when posted, all meetings are open to the membership. The Board of Directors and NTEP Committee will hold open hearings at the Interim Meeting and members will be invited to engage in dialogue with the Board on issues the Board and NTEP Committee have on their agenda. The Board of Directors is currently working on the following issues: conformity assessment, NCWM voting procedures, the use of work groups, the National Training Program, and participation internationally, i.e., International Organization on Legal Metrology (OIML), the OIML Mutual Acceptance Arrangement (MAA) the Canadian Forum on Trade Measurement (CFTM), the Asia-Pacific Legal Metrology Forum (APLMF), and U.S. National Work Groups (USNWG).

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Monday, January 22

During the Board of Directors/NTEP Committee's Open Hearing, the membership is invited to provide feedback on the following issues:

Details of all Items (In order by Reference Key Number)

1. Improving Standards Development

Judy Cardin made presentations on the use of Form 15 at each of the Regional Meetings. She received excellent feedback and the next step in the process will be to post clear instructions on how to fill out Form 15 on the NCWM website. In addition, Judy will continue to work on the editorial content of Form 15.

2. Marketplace Surveys

NCWM reviewed the process that had been used on the recent marketplace survey. The Board discussed ways to make the process more efficient and effective before the next survey is conducted. The results of the survey will be discussed at the Interim Meeting.

3. Meetings

Interim Meetings	
January 21 - 24, 2007	Omni Jacksonville, Jacksonville, Florida
January 27 - 30, 2008	Hyatt Regency Albuquerque, Albuquerque, New Mexico
Annual Meetings	
July 8 - 12, 2007	Snowbird Resort, Salt Lake City, Utah
July 13 - 17, 2008	Sheraton Burlington Hotel & Conference Center, Burlington, Vermont

Staff is in the process of investigating locations for the 2009 Interim and Annual meetings.

4. Membership Marketing

NCWM Chairman Mike Cleary directed staff to send out a mailing to lapsed members inviting them back as members. That effort netted 22 returning members. In addition, Mike has been communicating with members via regular broadcast emails. The intent of these emails has been to increase the two-way communication with members.

The Board also discussed the feedback that had been received from first-time attendees at the 2006 Annual Meeting. Based on that feedback, the Board discussed ways to improve the new member/first-timer orientation both before and during the meeting.

5. NCWM Website – www.ncwm.net

The Board reviewed the status of the website enhancements that had been approved in July. Membership renewal and application processing is now available online. Online meeting registration is in process.

6. Mutual Acceptance Arrangements

With the signing of the DoMC in July of this year in Chicago, Illinois, NCWM has taken yet another major step toward participation in the international standards development process (see Appendix A, OIML Report, for more detail). NCWM will continue to explore the benefits of participating in future opportunities. However, we all agree that our

future participation should be as an issuing participant (Country A) rather than as a utilizing participant with regard to R 76 or any other category of testing.

7. Participation in International Standard Setting

NCWM will continue to participate in the international standards setting process and look for every opportunity to harmonize where it is practical and in the best interest of this standards setting organization.

8. Increasing the Value and Attendance at Meetings

We will begin to implement training sessions, round tables and presentations at the NCWM Annual and Interim Meetings in order to increase the value to our membership. For our first-time members, a volume of recommendations was received from our membership and we will act on those recommendations to add value for our first-time attendees.

Board of Directors

Michael Cleary, California, NCWM Chairman Judy Cardin, Wisconsin, NCWM Chairman-Elect Don Onwiler, Nebraska, NTEP Chair Charles Carroll, Massachusetts Joe Gomez, New Mexico Jack Kane, Montana Randy Jennings, Tennessee Steven Malone, Nebraska Richard Wotthlie, Maryland Christopher B. Guay, Procter & Gamble Co. Darrell Flocken, Mettler-Toledo, Inc. NCWM Staff: Beth Palys, CAE NIST: Carol Hockert, Chief, Weights and Measures Division

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Appendix A

Report on the Activities of the International Organization of Legal Metrology (OIML) and Regional Legal Metrology Organizations

Weights and Measures Division, NIST

The Weights and Measures Division (WMD) of the National Institute of Standards and Technology (NIST) is responsible for coordinating U.S. participation in OIML and other international legal metrology organizations. Learn more about OIML at the OIML website at http://www.oiml.org and the WMD website at http://www.nist.gov/owm on the Internet. Dr. Charles Ehrlich, Group Leader of the International Legal Metrology Group (ILMG), can be contacted at charles.ehrlich@nist.gov or at (301) 975-4834 or by fax at (301) 975-8091.

Please note: OIML publications are available without cost at http://www.oiml.org

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Table BGlossary of Acronyms

BIML	International Bureau of Legal Metrology	IR	International Recommendation
CD	Committee Draft ¹	MAA	Mutual Acceptance Arrangement
CIML	International Committee of Legal Metrology	OIML	International Organization of Legal Metrology
CPR	Committee on Participation Review	РТВ	Physikalisch-Technischen Bundsanstalt
DD	Draft Document ²	R	Recommendation
DR	Draft Recommendation ²	SC	Technical Subcommittee
DV	Draft Vocabulary ²	TC	Technical Committee
DoMC	Declaration of Mutual Confidence	WD	Working Draft ³

 1 CD: a draft at the stage of development within a technical committee or subcommittee; in this document, successive drafts are numbered 1 CD, 2 CD, etc.

² DD and DR: draft documents approved at the level of the technical committee or subcommittee concerned and sent to BIML for approval by CIML.

³ WD: precedes the development of a CD; in this document, successive drafts are number 1 WD, 2 WD, etc.

* Explanation of acronyms provided by OIML.

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

I. Report on the Activities of the OIML Technical Committees

This section reports on recent activities and the status of work in OIML Technical Committees (TCs) and Technical Subcommittees (SCs) of specific interest to members of NCWM. Also included are schedules of future activities of the Secretariats, the U.S. National Work Groups (USNWGs), and the International Work Groups (IWGs) of the Committees and Subcommittees.

TC 3/SC 1 "Pattern Approval and Evaluation" (United States)

The subcommittee approved the U.S. proposal for a combined revision of OIML D 19 "Pattern evaluation and pattern approval" and D 20 "Initial and subsequent verification of measuring instruments and processes" into a single document entitled "Principles of metrological control of measuring instruments: type approval and verification." Key elements of OIML D 3 "Legal Qualification of Measuring Instruments," R 34 "Accuracy Classes of Measuring Instruments," and R 42 "Metal Stamps for Verification Officers" will also be incorporated into the combined revision of OIML D 19 and D 20. The revised documents will incorporate recent developments such as the OIML certificate system, D 27 "Initial verification of measuring instruments utilizing the manufacturer's quality management system," and the "Framework for a mutual acceptance arrangement (MAA) on OIML type evaluations." Consideration will be given to the appropriate conformity assessment options developed by the ISO Council Committee on Conformity Assessment (ISO CASCO), including quality systems, product certification, and accreditation. Consideration should be given also to information technology and statistical methods to increase or decrease verification intervals based upon proven instrument performance. For more information on this activity, contact Dr. Ambler Thompson at (301) 975-2333 or at ambler@nist.gov.

TC 5/SC 2 Software (Germany and BIML)

All OIML Documents and Recommendations published since 1990 have been reviewed for terms and requirements related to software. The ILMG submitted U.S. comments on a working draft of the document "Software in Legal Metrology" in June 2006. When complete, this document will serve as guidance for OIML technical committees addressing software requirements in Recommendations for software-controlled instruments. The ILMG participated in meetings of the NCWM Software Sector in Annapolis, Maryland, in October 2006. Please contact Wayne Stiefel at (301) 975-4011 or at stiefel@nist.gov if you would like a copy of the OIML working draft or to participate in this project.

TC 8/SC 1 "Static Volume and Mass Measurement" (Austria and Germany)

The Secretariat submitted 2 CD revisions in January 2006 for OIML R 71 "Fixed Storage Tanks," R 80 "Road and Rail Tankers," and R 85 "Automatic Level Gages for Measuring the Level of Liquid in Fixed Storage Tanks." U.S. comments, including those of the American Petroleum Institute, on all three of these documents were sent in April 2006. The Secretariat held a subcommittee meeting in May 2006 in Hamburg, Germany. The United States provided a "no" vote with comments on the 2 CD for R 71 and comments on the 2 CDs of R 80 and R 85. The Secretariat circulated a 3 CD for R 80 in November 2006 with comments and vote due in February 2007. Please contact Wayne Stiefel at (301) 975-4011 or at stiefel@nist.gov if you would like copies of the documents or to participate in these projects.

TC 8/SC 3 "Dynamic Volume and Mass Measurement for Liquids other than Water." (United States and Germany)

OIML R 117 "Measuring Instruments for Liquids other than Water" is undergoing an extensive revision, incorporating new instrument technologies and merging the document with OIML Recommendations R 86 "Drum Meters" and R 105 "Mass Flowmeters." This is a high priority project for OIML. ILMG is working with the USNWG on Flowmeters, Germany, and the Netherlands on this effort. Meetings of the USNWG on flowmeters were held during the NCWM Interim Meeting in January 2006 in Jacksonville, Florida, and the NCWM Annual Meeting in July 2006 in Chicago, Illinois. Measurement Canada has been a strong contributor to this effort. A 2 CD of R 117 was circulated to the two international subcommittees and received over 90 % international "yes" votes. OIML member nations will vote on the Draft Recommendation (DR) of R 117-1 by postal ballot with an objective of receiving full CIML approval on R 117-1 in early 2007. In October 2006, the CIML approved the merger of TC 8/SC 3 and TC 8/SC 4; the United States and Germany are now the co-secretariats of the combined TC 8/SC 3. Following the merger, the old subcommittee TC 8/SC 4 was disbanded. Work on R 117-2 "Test Methods" and R 117-3 "Test Report Format" will commence

following approval of R 117-1. If you have questions or would like to become involved in this effort, please contact Ralph Richter at (301) 975-3997 or ralph.richter@nist.gov.

TC 8/SC 7 "Gas Metering" (Belgium and France)

The Secretariat circulated a 3 CD of the Recommendation "Measuring Systems for Compressed Natural Gas (CNG) for Vehicles" and annexes covering performance tests for electronic devices and basic test procedures. In April 2003, the United States cast a negative ballot on the 3 CD because the testing requirements were considered to be unrealistic. A 4 CD is being prepared by the Secretariat.

A ballot was circulated on the 4 CD "Measuring Systems for Gaseous Fuel" and U.S. comments were returned in November 2005. This Recommendation is intended for large pipelines with large flowrates and high operating pressures, or systems not fitted with diaphragm gas meters. Different types of measuring systems are covered by the Recommendation: measuring systems providing indications of volume at base conditions or mass converted from a volume of gas determined at metering conditions, measuring systems providing directly the mass of gas, and measuring systems providing indication of energy corresponding to a volume at base conditions or a mass of gas. The United States voted "no" on the 4 CD of this document. Please contact Wayne Stiefel at (301) 975-4011 or at stiefel@nist.gov if you would like to obtain a copy of these documents or to participate in these projects.

TC 8/SC 8 "Gas Meters" (Netherlands)

Based on a poll of TC 8/SC 8 members, R 6 "General provisions for gas volume meters," R 31 "Diaphragm Gas Meters", and R 32 "Rotary Piston Gas Meters and Turbine Gas Meters" were revised and combined into a single Recommendation. The United States voted "yes" with comments on the 3 CD of this document in January 2006. The final DR was approved by CIML at their October 2006 meeting in Cape Town and will be published with the new designation of R 137-1 Gas Meters. Please contact Wayne Stiefel at (301) 975-4011 or at stiefel@nist.gov if you would like to participate in this project.

TC 9 "Instruments for Measuring Mass" (United States)

Now that the revision of R 76 "Non-automatic Weighing Instruments" is complete, the United States will send an inquiry in early 2007 to TC 9 members about revising R 60 "Load Cells". If you would like to participate in the revision of R 60, please contact Steve Cook at (301) 975-4003 or steven.cook@nist.gov.

TC 9/SC 1 "Nonautomatic Weighing Instruments" (Germany and France)

The revision of R 76 "Non-automatic Weighing Instruments" is of major importance to U.S. interests because the Recommendation serves as the foundation for a majority of the laws and regulations that govern weighing instruments around the world. The revision includes new language addressing metrological controls for type evaluations, conformity, initial and subsequent inspections, suitability of separable components and requirements for metrological software. The USNWG held a meeting in July 2005, and it is being consulted concerning proposals to harmonize Handbook 44 and R 76. The United States voted "yes" on the 2 CD of R 76 in January 2006, voted "yes" on the 3 CD of R 76 in June 2006. The DR of R 76-1 was approved by CIML in October 2006. For more information on this effort, please contact Steve Cook at (301) 975-4003 or steven.cook@nist.gov.

TC 9/SC 2 "Automatic Weighing Instruments" (United Kingdom)

The Recommendation R 134-1 "Automatic Instruments for Weighing Road Vehicles in Motion – Total Load and Axle Weighing" was approved by CIML in October 2006 with the agreement that U.S. comments concerning terminology and document scope were to be incorporated before publication. The test report format of this document, R 134-2, has been distributed in the United States and comments were submitted to the Secretariat in January 2006. Two other documents in this subcommittee are now under revision. The United States will return comments on the 2 CD of R 106 "Automatic Rail-weighbridges" in November 2006. The United States voted "no" on the most recent draft of R 107 "Discontinuous Totalizing Automatic Weighing Instruments (Totalizing Hopper Weighers)" because of concerns about the automatic zero. If you would like to receive copies of these documents or work on these projects, Richard Harshman is the contact at (301) 975-8107 or at harshman@nist.gov.

TC 17/SC 1 "Humidity" (China)

The Secretariat (China) is working closely with the United States and a small IWG to revise OIML R 59 "Moisture Meters for Cereal Grains and Oilseeds." All drafts have been distributed to the USNWG, which for the most part is a subset of the NTEP Grain Sector. In October 2003, China hosted a meeting of the TC 17/SC 1 subcommittee in Beijing,

China to review and discuss this revised document. A 2 CD that incorporated U.S. comments was circulated in May 2004 by the Secretariat. A meeting of the IWG was held in Paris, France in September 2004 to resolve conflicts on the document. U.S. comments on the 3 CD of R 59 were returned to the Secretariat in August 2005. A 4 CD was circulated to the IWG in August 2006. U.S. comments on the 4 CD were returned to the Secretariat in November 2006. Please contact Diane Lee at (301) 975-4405 or at diane.lee@nist.gov if you would like to participate in this work group.

TC 17/SC 8 "Quality Analysis of Agricultural Products" (Australia)

A new subcommittee has been formed to study the issues and write a working draft document "Measuring Instruments for Protein Determination in Grains." Australia is the Secretariat for this new subcommittee. A work group meeting was held in May 2004 in Sydney, Australia. A 2 WD of this document was received in August 2004, and a 3 WD was received in May 2005. A work group meeting was held in June 2005 in Berlin, Germany, to discuss the latest round of comments on the 3 WD. A 1 CD was circulated to the IWG in May 2006. U.S. comments on the 1 CD were returned to the Secretariat in August 2006. A work group meeting was held in September 2006 in Ottowa, Canada to discuss comments on the 1 CD. Please contact Diane Lee at (301) 975-4405 or at diane.lee@nist.gov if you would like to participate in this work group.

II. Mutual Acceptance Arrangement (MAA) on OIML Type Evaluations

On September 29, 2006, the International Bureau of Legal Metrology (BIML) issued a circular notifying CIML members and OIML Issuing Authorities that the first two Declarations of Mutual Confidence (DoMCs) for OIML R 60 (Load Cells) and R 76 (Non-automatic Weighing Instruments) have been officially published on the MAA pages of the OIML web site (www.oiml.org). The publication is in the form of two summaries of the individual registration forms signed by each participant. Five countries signed the R 60 DoMC as both Issuing and Utilizing Participants (an 'Issuing Participant' is one that performs tests and issues certificates under the DoMC), and another eleven countries signed as only Utilizing Participants. The United States (National Conference on Weights and Measures, Inc.) is listed as a Utilizing Participant. Seven countries signed the R 76 DoMC as both Issuing and Utilizing Participants, and another eight countries signed as only Utilizing Participants. The United States did not sign the R 76 DoMC. The complete listing can be found on the OIML web site.

The NCWM Board of Directors (Board) had earlier indicated to the BIML its desire to participate on the joint Committee on Participation Review (CPR) for R 60 and R 76, primarily to help answer many of NCWM's questions and concerns, and realized that many details regarding the implementation of the MAA would be developed through discussions of the CPR. NCWM also indicated to the BIML that NCWM anticipated it would sign the DoMC for R 76 only when it is prepared to do so as an OIML Issuing Participant. The BIML allowed NCWM to participate on the CPR under this arrangement. NCWM is still working towards becoming an Issuing Participant for R 76 by considering options for conducting the necessary tests according to the requirements in ISO/IEC 17025 for testing laboratories, as augmented for legal metrology testing.

At the January 2006 Interim Meeting in Jacksonville, Florida, the Board considered whether NCWM should be a Utilizing Participant for R 60 since all of the necessary load cell testing capability to be an Issuing Participant is not available in the United States. The Board decided there to sign the DoMC for R 60. After the second CPR meeting was held in March 2006 in Sydney, Australia, the signing of the DoMCs for R 60 and R 76 started. NCWM signed the DoMC (as a 'Utilizing Participant') for R 60 during a ceremony at the NCWM Annual Meeting in Chicago, Illinois, in July 2006. Under this DoMC, the National Type Evaluation Program (NTEP), run by NCWM, will accept test data on load cells that are tested according to the requirements in OIML R 60 (and 'additional,' agreed-upon requirements), from 'Issuing Participants' under the DoMC, to use as the basis for issuing NTEP certificates.

Now that the DoMCs for R 60 and R 76 have been signed, the 'definitive' CPR is established (NCWM is a member). All Issuing Participants of the DoMC must now issue OIML MAA Certificates for R 60 and R 76, except for what are being called 'basic' (old-style) certificates that had already been applied for earlier. A termination date for issuing 'basic' certificates was discussed at the 41st CIML meeting in Cape Town, South Africa (see report below) in October 2006, and was provisionally set for December 31, 2008. Note that the final termination date will establish when NTEP can no longer issue 'basic' OIML certificates.

OIML TC 3/SC 5 will start revising both publication B 10-1 (*MAA*) and publication B 3 "OIML Certificate System for Measuring Instruments" in 2007, based on issues that have arisen and been discussed in the CPR and CIML meetings.

A number of these issues were discussed at the Cape Town, South Africa CIML meeting, and several MAA-related resolutions were approved there (see report below) since it was agreed that decisions were needed before the revision process could be completed. TC 3/SC 5 is also circulating to its members for comment and vote on a Draft Guide for the application of ISO/IEC 17025 to legal metrology, and a 2 CD of the OIML Guide for the application of ISO/IEC Guide 65 to legal metrology.

The BIML has also announced a new CPR and DoMC for OIML R 49 (water meters), with the 'provisional' CPR to be established by January 31, 2007. It is not anticipated that the United States will take part in this CPR, at least not at this time.

For further information on the MAA and its implementation, please contact Dr. Charles Ehrlich at charles.ehrlich@nist.gov or at (301) 975-4834 or by fax at (301) 926-0647.

III. 41st CIML Meeting in Cape Town, South Africa, October 18 - 20, 2006

CIML gave final approval to the following Recommendations in South Africa:

- R 39 Rockwell hardness machines;
- R 49-1 Water meters intended for the metering of cold potable water and hot water. Part 1: Metrological and technical requirements;
- R 49-2 Water meters intended for the metering of cold potable water and hot water. Part 2: Test methods;
- R 51-1 Automatic catchweighing instruments.

Part 1: Metrological and technical requirements – Tests

- R 65 Force measuring system of uniaxial material testing machines;
- R 76-1 Non-automatic weighing instruments.
 - Part 1: Metrological and technical requirements Tests
- R 82 Gas chromatographic systems for the measuring pollution from pesticides and other toxic substances;
- R 83 Gas chromatograph/mass spectrometer systems for the analysis of organic pollutants in water;
- R 116 Inductively coupled plasma atomic emission spectrometers for the measurement of metal pollutants in water;
- R 134-1 Automatic instruments for weighing road vehicles in motion and axle-load measuring.
 - Part 1: Metrological and technical requirements Tests.
- R 137-1 Gas Meters.

Part 1: Requirements (new Recommendation).

The Committee also approved the withdrawal of R 74 *Electronic weighing instruments*.

CIML approved the following new work projects:

- New projects of TC 3/SC 5:
 - Revision of B 3 OIML Certificate System for Measuring Instruments;

- Revision of B 10-1 Framework for a Mutual Acceptance Arrangement on OIML Type Evaluations (MAA);

- Revision of B 10-2 Checklists for Issuing Authorities and Testing Laboratories Carrying Out OIML Type Evaluations;

- New projects to be allocated by the CIML President to the appropriate TC or SC, based on BIML proposals:
 Guide for the application of ISO/IEC Guide 62 to the assessment of quality system certification bodies in the field of legal metrology;
 - Guide for the application of ISO 9001 to legal metrology controls.
- New project of TC 16/SC 1
 - Revision of ISO 3930/OIML R 99 Instruments for measuring vehicle exhaust emissions.

The following work project was withdrawn:

• Project P 6 of TC 3/SC 5: OIML procedure for the review of laboratories to enable mutual acceptance of test results and OIML Certificates of Conformity;

The Committee approved the following proposals:

- When a revision of a publication is published, the previous version remains available on the OIML website, but with an indication that this version has been superseded;
- As long as the three parts of a revised Recommendation included in the Certificate System have not been published, the version referenced in the Certificate System remains applicable;
- When the Certificate System references a revised Recommendation, Certificates may still be issued by reference to the previous version providing that the application for a Certificate has been lodged before the publication of the revised version.

MAA Resolutions approved by CIML in South Africa:

- MAA Resolution 2006-1: BIML shall initially bear the costs of peer assessments and subsequently invoice the peer assessed bodies with a lump sum equal to 1500 €per assessor-day.
- MAA Resolution 2006-2: the end of the transitory period during which an OIML Issuing Authority which participates in the R 60 DoMC and/or the R 76 DoMC as a Utilizing Participant or which did not sign the R 60 DoMC and/or the R 76 DoMC will still be authorized to issue OIML Certificates of Conformity according to OIML B 3 (outside the scope of the MAA), is provisionally fixed at December 31, 2008.
 - This deadline will be reviewed by CIML at its 43^{rd} Meeting based on a BIML report on operation, experience, and feedback from industry.
- MAA Resolution 2006-3: the R 49 DoMC will continue to move forward despite the fact that for the moment there is only one potential Issuing Participant.

In addition to these Resolutions, the Committee took note that Issuing Participants in the R 60 and R 76 DoMCs are able to issue basic OIML Certificates related to applications for OIML type evaluations received before the publication of the DoMC. CIML instructed TC 3/SC 5 to consider the rules for appointing new Issuing Authorities after the transition period mentioned in the MAA Resolution 2006-2 above, and to propose an appropriate solution for approval by the Committee.

Report of the Work Group on "Conformity to Type"

The Committee took note of the report given by Mr. Grahame G. Harvey, WG Convenor, on the meeting held on October 14, 2006, and instructed the WG to continue its work as proposed during the meeting.

The Committee instructed the Bureau and the TC 3 Secretariat (Metrological control) to review the work and organizational structure TC 3, including that of its subcommittees and the WG on Conformity to type.

Positions filled:

The Committee elected Mr. Grahame Harvey (Australia) as CIML Second Vice-President. He will take over his duties immediately.

On the proposal of the CIML President, the Committee appointed Mr. Willem Kool as BIML Assistant Director to fill the position of the retiring Mr. Szilvássy in 2007.

IV. Future CIML Meetings

The 42nd CIML Meeting will be hosted by the People's Republic of China in October 2007 in Shanghai, China. CIML accepted Australia's invitation to hold the 13th Conference and 43rd CIML Meeting in Sydney, Australia, in 2008.

V. Regional Legal Metrology Organizations

SIM Workshop on Fuel Dispensers

Wayne Stiefel participated in the workshop and made presentations on audit trail security and software developments in OIML and U.S. NWCM. The workshop was held September 15, 2006, at INMETRO Brazil and attended by 32 representatives from 16 countries: Antigua & Barbuda, Brazil, Chile, Costa Rica, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Paraguai, St. Kitts & Nevis, St. Lucia, St. Vincent, Trinidad & Tobago, United States, and Uruguay. Other topics covered included The Mercosul Draft Directive on Fuel Dispensers – based on OIML R 117 and the Mexican process for prototype fuel dispenser hardware and software approval by CENAM.

Meeting of the SIM General Assembly

ILMG participated in the SIM General Assembly which convened September 16 - 17, 2006, in Rio de Janeiro, Brazil. Dr. Huberto S. Brandi, Director of Scientific and Industrial Metrology at INMETRO Brazil, was elected President.

APLMF Meeting

The 13th APLMF Meeting was held November 15 - 17, 2006, in Singapore. The United States was represented by Dr. Charles Ehrlich, who serves as Chairman of the APLMF Work Group on Mutual Recognition Arrangements. APLMF conducted six training courses/seminars in 2006, including one on the verification of CNG Fuel Dispensers at which the two instructors were from the California Division of Measurement Standards. A Seminar on the Singapore Authorized Verifier Scheme was held to announce and describe this new program in Singapore, where private organizations are empowered to conduct verifications under the supervision of the Singapore regulatory authority, SPRING Singapore. A Workshop on Metrology of Agricultural Products and Foods is planned to be held February 7 - 9, 2007 in Thailand. The Peoples Republic of China announced that it would take over the Presidency and Secretariat of APLMF in 2007. The next meeting of APLMF will be in late October 2007, in Shanghai, China.

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Appendix B

Interim Agenda of the Associate Membership Committee (AMC)

Stephen Langford, Cardinal Scale

- Call to Order
- Approval of July 10, 2006, minutes
- Financial Condition
- NCWM Board of Directors Report (Darrell Flocken)
- AMC Fund Disbursement Requests

2006 Training Funds Report

Training Requests

Special Event

AMC Reserve

- Agenda Review Report
- Recommendations for AMC member on Board of Directors
- Old Business
- New Business
- Adjournment

Stephen Langford, Cardinal Scale, Chair (2007) Vincent Orr, ConAgra Foods, Vice Chair (2008) Paul Lewis, Rice Lake Weighing Systems, Secretary/Treasurer (2009)

William Sveum, Kraft Foods (2007) Darrell Flocken, Mettler-Toledo (2008) Cary Frye, International Dairy Foods Assoc. (2008) Michael Gaspers, Farmland Foods, Inc., (2009) Thomas Herrington, Nestlé USA (2010) Chris Guay, Procter & Gamble (2010)

Associate Membership Committee

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Laws and Regulations Committee Interim Agenda

Jimmy Cassidy, Chairman Cambridge, Massachusetts

200 INTRODUCTION

The Laws and Regulations Committee (Committee) will address the following items at its Interim Meeting. 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. The fact that an item may appear on the agenda does not mean it will be presented to NCWM for a vote; the Committee may withdraw some items, present some items for information and further study, issue interpretations, or make specific recommendations for changes to the publications listed below. The recommendations presented in this agenda are statements of proposal and not necessarily recommendations of the Committee. The appendices to the report are listed in Table B.

This agenda contains recommendations to amend National Institute of Standards and Technology (NIST) Handbook 130, "Uniform Laws and Regulations," (2006-07), and NIST Handbook 133, "Checking the Net Contents of Packaged Goods," (2005) Fourth Edition. Revisions proposed for the handbooks are shown in **bold face print** by crossing out information to be deleted and <u>underlining</u> information to be added. Additions proposed for the handbooks are designated as such and are shown in **bold face print**. Proposals presented for information only are designated as such and are shown in *italic* type. "SI" means the International System of Units. "FPLA" means the Fair Packaging and Labeling Act. The section mark, "§," is used in most references in the text and is followed by the section number and title, (for example, Section 1.2. Weight). When used in this report, the term "weight" means "mass."

Subject Series

INTRODUCTION	200 Series
NIST Handbook 130 – General	
Uniform Laws	
Weights and Measures Law (WML)	
Weighmaster Law (WL)	
Engine Fuels, Petroleum Products, and Automotive Lubricants Inspection Law (EFL)	223 Series
Uniform Regulations	
Packaging and Labeling Regulation (PLR)	
Method of Sale Regulation (MSR)	
Unit Pricing Regulation (UPR)	
Voluntary Registration Regulation (VRR)	
Open Dating Regulation (ODR)	
Uniform National Type Evaluation Regulation (UNTER)	
Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation (EFR)	
Examination Procedure for Price Verification	240 Series
Interpretations and Guidelines	250 Series
NIST Handbook 133	260 Series
Other Items	270 Series

Table A
Index to Reference Key Items

		muck to kelerence key items	
Reference Key Number		ber Title of Item	
200	IN	TRODUCTION	1
232	M	ETHOD OF SALE REGULATION	3
	232-1	Temperature Compensation for Petroleum Products	3
	232-2	Biodiesel and Fuel Ethanol Labeling	8
260	NI	ST HANDBOOK 133 "CHECKING THE NET CONTENTS OF PACKAGED GOODS"	10
	260-1	2.6 Drained Weight for Glazed or Frozen Seafood	10
	260-2	Worksheet for Liquid Volumes	10
270	Ю	HER ITEMS – DEVELOPING ITEMS	12
	270-1	Add to NIST Handbook 130, Method of Sale Regulation	12
	270-2	Amend NIST Handbook 130, Method of Sale Regulation Section 2.13.4. Declaration of Weight	13
	270-3	Add Section 2.1.6. to NIST Handbook 130, Interpretations and Guidelines	14
	270-4	Amend Handbook 133, Chapter 4.7 Polyethylene Sheeting – Test Procedure	19
	270-5	Amend Section 2.2.1. in Handbook 130 Uniform Engine Fuels Regulation - Premium Diesel Lubricity.	19
	270-6	Amend Handbook 130 Interpretations and Guidelines Section 2.3.2. Guidelines for the Method of Sale	
		of Fresh Fruits and Vegetables	21
	270-7	Amend Handbook 133 Section 2.3, Moisture Allowances to Provide Clearer Guidance.	21

Daily Schedule

Sunday, January 21			
1:00 p.m 5:00 p.m.	Committee Review Session: This session is open to all NCWM members but participation in the discussion is generally limited to members of the Committee.		
Monday, January 22			
8:30 a.m 5:00 p.m.	Committee Open Hearings: Comments will be accepted on the following topics:		
	232 Method of Sale Regulation		
	237 Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation		
	250 Interpretations and Guidelines		
	260 NIST Handbook 133		
Tuesday, January 23 8:30 a.m 12:00 p.m.	Committee Open Hearings (continued): Comments will continue to be accepted on the above topics.		
1:00 p.m 5:00 p.m.	Committee Work Session: This session is open to all NCWM members but participation in the discussion is generally limited to members of the Committee.		
Wednesday, January 24 8:30 a.m 11:00 a.m.	Committee Work Session: This session is open to all NCWM members but participation in the discussion is generally limited to members of the Committee.		
11:00 a.m 12:00 p.m.	Joint Session with all Standing Committees		

Details of all Items (In order by Reference Key Number)

232 METHOD OF SALE REGULATION

232-1 Temperature Compensation for Petroleum Products

See page 7 for the latest discussions and alternative recommendations on temperature compensation which came out of the 2006 meetings of several of the regional weights and measures associations.

Source: Southern Weights and Measures Association (SWMA). (See Item 232-4 in the Report of the 90th NCWM Annual Meeting in 2005.)

Recommendation: Amend the Method of Sale Regulation in Handbook 130 by adding the following:

2.XX. Refined Petroleum Products

2.XX.A. -- Where not in conflict with other statutes or regulations, refined petroleum products delivered through: (1) vehicle tank meters, (2) stationary meters with flow rates of 115 L (30 gal) or more per minute, and (3) loading rack meters *may* be sold with the volume adjusted to compensate for temperature. When petroleum products are sold temperature compensated:

(a) All sales shall be in terms of liters or U.S. gallons at 15 °C (60 °F);

- (b) The temperature compensation shall be accomplished through automatic means;
- (c) The primary indicating elements, recording elements, and all recorded representations (receipts, invoices, bills of lading, etc.) shall be clearly and conspicuously marked to show that the volume delivered has been adjusted to the volume at 15 °C (60 °F);
- (d) For vehicle tank meters, all sales by the same person or company for the same metering application within the same state shall be sold temperature compensated in 12-month increments. For example, a company may not choose to operate some vehicle tank meters with automatic temperature compensators and others without. Nor may a company choose to engage the automatic temperature compensator on a device only during certain times of the year.
- (e) For stationary meters with flow rates of 115 L (30 gal) or more per minute, all sales by the same person or company for the same metering application at the same location shall be sold temperature compensated in 12-month increments. For example, a company may not choose to operate some stationary meters with automatic temperature compensators and others without. Nor may a company choose to engage the automatic temperature compensator on a device only during certain times of the year.
- (f) For loading rack meters, except for contract sales all sales by the same person or company for the same metering application at the same location shall be sold temperature compensated in 12-month increments. Contract sales may have the method of sale specified within the terms of the contract, but whichever method of sale is selected shall be implemented in 12-month increments. For example, a company may not choose to engage the automatic temperature compensator on a device only during certain times of the year.

2.XX.B. -- Where not in conflict with other statutes or regulations, petroleum products delivered through meters other than those specified in Section 2.XX.A. shall be sold *without* the volume adjusted to compensate for temperature.

<u>Note 1: As defined in the Handbook 130 Engine Fuels, Petroleum Products, and Automotive Lubricants</u> <u>Inspection Law, refined petroleum products are products obtained from distilling and processing of</u> <u>petroleum (crude oil), unfinished oils, recycled oils, natural gas liquids, refinery blend stocks, and other</u> <u>miscellaneous hydrocarbon compounds.</u>

Note 2: Paragraphs 2.XX.A.(d) and (e) shall only be effective as long as temperature-compensated sales remain permissive in at least some relevant applications. If temperature compensation becomes mandatory for all relevant applications, then these paragraphs shall be removed.

Background: Selling fuel adjusted to the volume at $15 \,^{\circ}$ C (60 $^{\circ}$ F) throughout the distribution system is the most equitable way fuel can be sold without the buyer or seller gaining a competitive advantage.

This item is considered in conjunction with a temperature compensation item that is before the Specifications and Tolerances (S&T) Committee, Item 331-1, although the S&T Committee's item is limited to vehicle-tank meters.

A similar proposal was made by the Northeast Weights and Measures Association (NEWMA) in 2000. NEWMA noted that Pennsylvania, New Hampshire, Maine, and Canada permit temperature compensation in sales of products like home heating fuel and retail gasoline. In 2001 the Committee withdrew this item after hearing testimony from several jurisdictions that opposed it.

The Committee has heard numerous comments in support of, and a few comments in opposition to, temperaturecompensated sales of petroleum fuels. While most comments generally supported temperature-compensated sales, the Committee received comments from a couple of jurisdictions that were concerned about the additional inspection time and resources that will be needed to test devices equipped with temperature compensators.

Among the comments received in support of temperature-compensated sales, there was a fair amount of disagreement about how this should be accomplished. Most of the discussion fell into one of three broad categories: (1) If temperature-compensated sales are allowed, what should they look like? (2) In which metering applications should temperature-compensated sales be allowed? (3) Should temperature-compensated sales be permissive or mandatory?

What should temperature-compensated sales look like?

The Committee heard from the Western Weights and Measures Association (WWMA), the Central Weights and Measures Association (CWMA), and the Southern Weights and Measures Association (SWMA) that temperaturecompensated sales needed to have certain parameters established so that all sales conducted in this manner are comparable. All three regions agreed that (1) temperature-compensated sales should be adjusted to the volume at 15 °C (60 °F), (2) temperature compensation should be accomplished through automatic means, (3) indicating and recording elements and all written representations should indicate that the volume delivered is temperature compensated, and (4) all sales by the same person/company for the same metering application within the same jurisdiction must be sold either compensated or uncompensated for full calendar years.

The Committee adopted these criteria into its recommendation.

In which metering applications should temperature-compensated sales be allowed?

The Committee heard from WWMA and SWMA that temperature-compensated sales should be allowed in all metering applications through meters with flow rates of 20 gal or more per minute. The flow rate of 20 gal per minute was selected because it was believed this would effectively allow temperature-compensated sales in all applications except for standard retail motor-fuel devices. Both regions thought that temperature-compensated sales should be prohibited through standard retail motor-fuel devices.

The Committee heard from CWMA that temperature-compensated sales should be limited to sales through vehicle tank meters, loading-rack meters, and retail motor-fuel devices used exclusively for fueling trucks in sales of 100 gal or more. CWMA was concerned that allowing temperature-compensated sales in all metering applications except standard retail motor-fuel devices was overly broad. CWMA was more comfortable with listing specific applications where temperature-compensated sales would be allowed and wanted it made clear that temperature-compensated sales would be prohibited through standard retail motor-fuel devices. CWMA submitted the following language for the Committee's consideration:

<u>2.X.X.</u> – Wholesale refined petroleum product sales, sales of diesel fuel for truck refueling, and bulk sales of refined petroleum products of 100 gal or more may be dispensed through a meter that automatically compensates for the temperature to represent a gallon as 231 in³ at 60 °F.

2.XX.1. – Implementation: Wholesalers and retailers that implement temperature compensation for wholesale sales, devices used exclusively for diesel fuel for truck refueling, or bulk sales of refined petroleum products of 100 gal or more shall implement this practice for all meters or dispensers at such locations.

<u>2.XX.2. – Temperature-compensation disclosure: All meters or dispensers which employ</u> temperature compensation shall be labeled on the meter or dispenser, and the printed representation must state that the volume represented has been corrected to 60 °F.

<u>Note 1. Refined petroleum products are derived from crude oils through processes such as catalytic cracking and fractional distillation.</u>

Note 2. Diesel fuel means a refined middle distillant suitable for use as a fuel in a compression-ignition engine (diesel) internal combustion engine.

The Committee's recommendation constitutes a compromise. The Committee agreed with CWMA that the most prudent approach to temperature-compensated sales was to limit them to specific metering applications where almost everyone would be comfortable with its use. The Committee preferred the approach of WWMA and SWMA when defining retail motor-fuel devices used exclusively for fueling trucks and opted to define these devices based upon the meter flow rate rather than the delivery quantity. The Committee selected a flow rate of 115 L (30 gal) to be consistent with the thresholds in the LMD code in Handbook 44. Section S.4.4. and Table T.2. of the LMD code that specify the minimum flow rate of large-capacity metering devices as 115 L (30 gal) per minute. Finally, the Committee included language in the recommendation that makes it clear that, where not expressly permitted, temperature-compensated sales are prohibited.

Should temperature-compensated sales be permissive or mandatory?

The Committee heard from WWMA and SWMA that temperature-compensated sales should be implemented on a permissive basis, but that future mandatory dates should be established. Those who support a mandatory requirement believe that in the long run a permissive requirement will cause confusion within the marketplace and hinder the consumer's ability to make value comparisons between companies that sell products compensated and those that don't. Particularly with regard to home heating fuel sales, jurisdictions are concerned customers will not be told if the price per gallon they are being quoted prior to the sale is compensated or uncompensated (even if it is disclosed on the invoice they receive after the delivery). In addition, even if consumers are informed that a product quote is for a temperature-compensated delivery, consumers won't know what it means and won't be able to make a meaningful comparison between quotes for compensated and uncompensated products. WWMA and SWMA recommended that future mandatory dates be established based on a reasonable timetable for each type of metering application that takes into consideration equipment replacement costs and existing device life-expectancy. NIST suggested, as an alternative, that mandatory dates for each type of metering application be established initially for new installations and that later dates be established for existing devices.

The Committee heard from CWMA that temperature-compensated sales should be implemented on a purely permissive basis. CWMA opposes the inclusion of any future mandatory dates at this time. CWMA believes that temperature-compensated sales should be market-driven and that suppliers will make sales on a temperature-compensated basis when consumers demand it and should not be required to do so before then. Many jurisdictions believe that the imposition of a mandatory requirement is too burdensome on the industry, requiring upgrades and possibly the replacement of many meters without adequate justification.

The Committee agreed that the inclusion of mandatory dates during the initial implementation of this item was too controversial and would elicit too much opposition. The Committee felt it was important to get some form of regulation regarding temperature-compensated sales of petroleum adopted into Handbook 130 and thought that as many barriers as possible should be removed in order to achieve this goal. Although the Committee's recommendation reflects a purely

permissive requirement for temperature-compensated sales, the Committee may be willing to consider establishing future mandatory dates if a need is demonstrated after this permissive regulation is implemented.

Finally, the Committee heard requests from the American Petroleum Institute (API) to: (1) recognize and permit different methods of sale at loading rack meters when such sales are under contract, and (2) prohibit temperaturecompensated sales through stationary meters with flow rates of 115 L (30 gal) or more per minute. The Committee agreed with API's first request regarding contract sales, and included language in the loading rack meter paragraph (2.XX.A (f)) to permit the method of sale to be determined by contract when an active and valid contract is present. The Committee carefully considered and then decided against API's request to prohibit temperature-compensated sales through high-flow stationary meters. The Committee rejected this request because the idea behind implementing a permissive temperature compensation standard is to allow the marketplace to drive the implementation of such a standard. The Committee has heard strong support for temperature-compensated sales through high-flow stationary meters. The Committee believes that with the support of a well educated and well defined end user, it is inconsistent with the idea of marketplace-driven implementation for the Committee to create a barrier to temperature-compensated sales in this limited, well-defined application. The Committee notes that since this is a permissive requirement, the decision of whether or not to sell petroleum products with the volume adjusted to compensate for temperature remains with the seller, and that the seller will not incur any additional expense or be required to upgrade their equipment unless they make the decision to change their current method of sale practices.

At its 2006 Annual Meeting the WWMA L&R Committee heard the following testimony from the American Petroleum Institute (API) regarding recent media publications concerning the lack of temperature compensation at retail fuel stations:

- API is opposed to temperature compensation at the retail level.
- The physics of petroleum products have not changed and should not be dealt with on a basis of energy content, as seems to be the issue in considering temperature compensation. A gallon sale should result in an actual gallon delivery, which is what consumers receive today. An example was discussed regarding the fact that ethanol does not provide energy equivalent to that of gasoline, raising the question (although not recommended) of whether further compensations should be made for that issue;
- Public concerns regarding volumes of fuel delivered in retail sales are misdirected at major oil companies which operate only approximately 10 % of all stations.
- API has taken no position on temperature compensation regarding Vehicle-Tank Meters

A meter user association representative testified that approximately 15 % of retail dispensers currently in use are mechanical and are unable to be retrofitted for temperature compensation. He stated that nearly all retail dispensers would need retrofitting and many older electronic dispensers could not be modified to perform automatic temperature compensation and cannot be interfaced with software to perform the adjustments. He suggested an estimate of \$4 billion to convert all retail fuel dispensers for ATC.

A meter manufacturer testified that a decision on this issue is needed, indicating that parameters must be defined and a decision to allow or disallow temperature compensation in retail fuel transactions is necessary for the industry to determine its directions on the matter. The manufacturer stated that his company is receiving increased calls from customers requesting the technology and mentioned two major manufacturers who currently have developed ATC devices. He recommended that the Committee pursue permissive, not mandatory, language in developing the model regulation. The manufacturer noted that previous attempts to submit ATC devices for type-approval have been rejected and, therefore, Certificates of Conformance cannot be obtained. In response to other testimony suggesting that implementation of temperature compensators would merely introduce another opportunity for consumers to allege that tampering with the compensators affects delivery volume, the manufacturer stated no knowledge of any such allegations from the public regarding any existing installations.

The meter manufacturer also commented that retail ATC technology is not in the field in the United States. He stated that conversions/retrofitting would be very difficult to do in the field given the numerous fluid plumbing connections and installation of electronic components that would be necessary. He stated that most existing fuel dispensing equipment has a lifespan of 10 to 12 years.

A state director requested information regarding states that currently prohibit temperature compensation. California responded that for transactions involving 5000 gal or more the purchaser may request temperature compensation. Idaho
responded that for transactions involving 8000 gal or more the purchaser has an option to buy, on a yearly basis, temperature-compensated product and that all terminal transactions are temperature-compensated. Arizona responded that any transactions involving more than 5000 gal must be compensated for temperature. A state director further commented that he had concerns regarding any "permissive" versus "mandatory" use of ATC. He believes the consumer is more concerned with the "perception" of fraud occurring through failure to compensate for temperature variations rather than the technical issues surrounding temperature compensation.

Another state director commented that many factors must be considered in addressing temperature compensation, including realization that field tests to verify functionality and accuracy will require greatly increased inspection time and significant additional costs to regulatory agencies. Additionally, factors such as the API table of properties of the respective petroleum products and expansion factors for provers of varying composition (materials) must be considered when testing ATC dispensers. Also, he stated that determinations of temperature changes between product at the meter thermometer well and that delivered into the vessel (prover) must be taken into account.

A county weights and measures director stated support for the item, stating that temperature compensation should be permitted only on a voluntary or permissive basis to allow for the marketplace to drive its implementation.

Two state directors testified in support of the item, as written. One stated that temperature-compensated transactions are the most accurate means to transact business and it is "our responsibility" to ensure accuracy.

WWMA supports the concept that sales based upon temperature compensation provide the most accurate and equitable transaction for both buyers and sellers. The Committee received testimony from members of industry and weights and measures officials in agreement with this opinion. While WWMA recommends that temperature compensation be permissible at all levels of petroleum sales, it also recognizes that a mandate for automatic temperature compensation technology in all petroleum sales within a short time period would present unreasonable costs to various levels of the petroleum industry. By making it permissive, market forces will dictate the implementation of this technology. Therefore, WWMA recommends the following:

Amend the Method of Sale Regulation in Handbook 130 by adding the following:

2.XX. Refined Petroleum Products

2.XX.A. Where not in conflict with other statutes or regulations, refined petroleum products delivered through any meter may be sold with the volume adjusted to compensate for temperature. When petroleum products are sold temperature-compensated:

- (a) All sales shall be in terms of liters or U.S. gallons at 15 °C (60 °F);
- (b) The temperature compensation shall be accomplished through automatic means;
- (c) The primary indicating elements, recording elements, and all recorded representations (receipts, invoices, bills of lading, etc.) shall be clearly and conspicuously marked to show that the volume delivered has been adjusted to the volume at 15 °C (60 °F);
- (d) All sales by the same person or company for the same metering application within the same state shall be sold temperature compensated in 12-month increments. For example, a person or company may not choose to operate some meters at one location or meters at one location within a state with automatic temperature compensators and others without. Nor may a person or company choose to engage the automatic temperature compensator on a device only during certain times of the year.

Note: As defined in Handbook 130 Engine Fuels, Petroleum Products, and Automotive Lubricants Inspection Law, refined petroleum products are products obtained from distilling and processing of petroleum (crude oil), unfinished oils, recycled oils, natural gas liquids, refinery blend stocks, and other miscellaneous hydrocarbon compounds. At the 2006 CWMA Interim Meeting there was discussion regarding the Veeder Root report of underground tank temperatures nationwide. Additional data needs to be accumulated to verify the impact to consumers and marketers.

The market is requesting consideration of the temperature compensation method of sale for petroleum products. A representative from an equipment manufacturer commented that customers have requested the equipment for several years. It was recommended that the S&T Committee consider the Canadian regulations for temperature compensation.

API opposed the proposal at all levels in retail. It was noted by the API representative that 90 % of the service stations are owned by independent operators, not major oil companies. Other comments for opposition included the cost of converting pumps and additional time for regulatory officials to inspect.

The CWMA L&R Committee recommends support for the Western's Annual proposal with the permissive language as a voting item. The Committee agrees that temperature compensation is the more equitable method of sale and is currently predominantly utilized at every step of the distribution channel except for retail. Additionally, the Committee believes this proposal should not be restricted to only petroleum products but should also include alternative fuels such as E85, biodiesel and biodiesel blends.

SWMA at its 2006 Annual Meeting strongly encourages the NCWM L&R and S&T Committees to separate the various temperature compensation metering applications as follows: Wholesale (loading rack), Vehicle-tank Meter, Stationary Meters with flow rates of 30 gpm or more (Truckstops), and Retail Motor-fuel Devices with a flow rate of 30 gpm.

Due to the lack of documented information on the economic impact of temperature compensation for both industry and consumer, SWMA does not support temperature compensation for dispensers with flow rates of less than 30 gpm.

232-2 Biodiesel and Fuel Ethanol Labeling

Source: Central Weights and Measures Association (CWMA)

Recommendation: Add the biodiesel and fuel ethanol labeling requirements that currently appear in Handbook 130 Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation to the Method of Sale Regulation.

Add the following text to the Method of Sale Regulation in Handbook 130:

2.XX. Biodiesel.

2.XX.1. Identification of Product. – Biodiesel and biodiesel blends shall be identified by the capital letter B followed by the numerical value representing the volume percentage of biodiesel fuel. (Examples: B10; B20; B100)

2.XX.2. Labeling of Retail Dispensers Containing Between 5 % and 20 % Biodiesel. Each retail dispenser of biodiesel blend containing more than 5 % and up to and including 20 % biodiesel shall be labeled with either:

2.XX.2.1. The capital letter B followed by the numerical value representing the volume percentage of biodiesel fuel and ending with 'biodiesel blend.' (Examples: B10 biodiesel blend; B20 biodiesel blend), or;

2.XX.2.2. The phrase 'biodiesel blend between 5 % and 20 %' or similar words.

2.XX.3. Labeling of Retail Dispensers Containing More Than 20 % Biodiesel. – Each retail dispenser of biodiesel or biodiesel blend containing more than 20 % biodiesel shall be labeled with the capital letter B followed by the numerical value representing the volume percentage of biodiesel fuel and ending with either 'biodiesel' or 'biodiesel blend.' (Examples: B100 Biodiesel; B60 Biodiesel Blend)

2.XX.4. Documentation for Dispenser Labeling Purposes. – The retailer shall be provided, at the time of delivery of the fuel, with a declaration of the volume percent biodiesel on an invoice, bill of lading, shipping paper, or other document. This documentation is for dispenser labeling purposes only; it is the responsibility of any potential blender to determine the amount of biodiesel in the diesel fuel prior to blending.

2.XX.5. Exemption. – Biodiesel blends containing 5 % or less biodiesel by volume are exempted from requirements 2.XX.1 through 2.XX.4.

2.YY. Fuel Ethanol.

2.YY.1. How to Identify Fuel Ethanol. – Fuel ethanol shall be identified by the capital letter E followed by the numerical value volume percentage. (Example: E85)

2.YY.2. Retail Dispenser Labeling. – Each retail dispenser of fuel ethanol shall be labeled with the capital letter E followed by the numerical value volume percent denatured ethanol and ending with the word 'ethanol.' (Example: E85 Ethanol)

2.YY.3. Additional Labeling Requirements. – Fuel ethanol shall be labeled with its automotive fuel rating in accordance with 16 CFR Part 306.

Discussion: This proposal does not impose any new requirements. These requirements have already been adopted and are published in the Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation in Handbook 130. This proposal would place duplicate requirements into the Method of Sale Regulation.

Section 2.20. of the Method of Sale Regulation in Handbook 130 currently contains requirements for the disclosure of oxygenates in gasoline blends. Including requirements for the disclosure of biodiesel, biodiesel blends, and fuel ethanol is consistent with this practice and should be required in order to ensure consumers are fully informed when making purchasing decisions.

The NCWM L&R Committee has received numerous comments in support of this item and has heard from the National Biodiesel Board that, in general, supports this item. However, the National Biodiesel Board has requested the Committee keep this item on its agenda as an informational item until ASTM finalizes its recommendations for biodiesel specifications. Waiting for the ASTM biodiesel specifications before moving this item forward for a vote will ensure there are no conflicts resulting from language discrepancies between the ASTM biodiesel specifications and the wording of this item.

The Committee has heard some concerns about perceived discrepancies between this item's ethanol labeling requirements and the Federal Trade Commission's (FTC's) regulation regarding ethanol labeling. These concerns were also raised during the placement of this language in the Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation. The Committee has previously evaluated this with the assistance of the FTC and believes there is no conflict.

At its 2006 Annual Meeting the WWMA L&R Committee received no comments regarding this item. WWMA acknowledges the National Biodiesel Board's request to the NCWM L&R Committee to keep this item Informational pending the ASTM final recommendations regarding biodiesel specifications. WWMA concurs that waiting for publication of those ASTM specifications will prevent conflicts in developing the final labeling requirements for biodiesel.

CWMA at its 2006 Interim Meeting in general supported biodiesel labeling. A few comments were received that the biodiesel label requirement should include percentages below 5 %. An update on activity within ASTM to develop a stability specification for B 100 was provided. After negative votes are adjudicated, ballots will be circulated to add B 5 limit to the D 975 diesel specification and to establish a B 20 specification. CWMA recommends keeping the biodiesel labeling as informational until ASTM establishes the biodiesel blend specifications. CWMA also recommends moving the E85 item forward as a voting item.

260 NIST HANDBOOK 133 "CHECKING THE NET CONTENTS OF PACKAGED GOODS"

260-1 2.6 Drained Weight for Glazed or Frozen Seafood

Source: Northeast Weights and Measures Association (NEWMA)

Proposal: Amend Section 2.6 Drained Weight for Glazed or Frozen Foods of NIST Handbook 133 as indicated in *italics:*

- 1. 2.6 Drained Weight for Glazed or Frozen Sea foods.
- 2. How is the drained weight of frozen shrimp and crabmeats eafood determined?
- 3. Change all references to shrimp and crabmeat to just the word "seafood."
- 4. Delete the glazed section procedure.

Discussion: At its 2006 Interim Meeting, NEWMA addressed the following problems and questions concerning the proposed changes to Section 2.6 of Handbook 133:

- 1. If the intent is to apply Section 2.6 to just seafood, the heading should just say Frozen Seafoods. It was the opinion of NEWMA that this was the intent. If the intent is to apply this to all frozen food, which is a very broad category then the committees need to look at the intent of this section. Does it apply to frozen vegetables?
- 2. The procedure paragraph is too specific. It uses just shrimp and crabmeat as examples. It should be generalized by using the term "frozen seafood."
- 3. The glazed section is not needed. The immersion method will work for glazed products. However, if the committee feels they need this method, then an editorial change needs to be made. The heading says glazed raw seafood and fish and the next sentence starts that way. The next sentence ends saying, frozen glazed food product. The question is, which one is it, seafood and fish or frozen food products? Does this section cover glazed chicken wings? If it does, I don't think chicken is a sea food.
- 4. If an item is not labeled glazed even though it might be glazed, how does the inspector test the product? It is very hard to tell glazed from simply frozen. Immersion works for both. Supermarkets repack large bags of shrimp and scallops into smaller bags and do not take the tare for the glazing or mark the bags glazed.

260-2 Worksheet for Liquid Volumes

Proposal: Amend Section 3.2 Gravimetric Test Procedure for Liquids of NIST Handbook 133 to add a worksheet for testing packages labeled by liquid volume.

Source: Central Weights and Measures Association (CWMA)

The proposed worksheet shown on the following page was reformatted from a worksheet created by CWMA in landscape format. It has been converted to portrait format for use in gravimetric testing as described below.

CWMA believes the worksheet is a necessary inspection tool for gravimetric testing of packages labeled by liquid volume. The worksheet is used for determining average density, nominal gross weight, converting the MAV from liquid volume to mass units, and converting the average error back to labeled units of volume. A worksheet was included in the third edition of NIST Handbook 133, but was not included in the fourth edition. This proposal is to add the worksheet to the fourth edition of NIST Handbook 133 with improvements. The new worksheet is one page instead of two. It has also been modified to provide the added benefit of helping the inspector identify the largest labeled declaration (i.e., fl oz vs. decimal pt vs. ml) and using that declaration to determine the nominal gross weight for the packages.

The worksheet has been tested in Nebraska and has proven to be an effective and vital tool for package inspectors.

CWMA believes this functional and simple worksheet in Handbook 133 will promote more inspection of packages labeled by liquid volume. Many inspectors currently shy away from those types of packages because they are intimidated by the added complexity of the procedure. This worksheet will greatly reduce that complexity to a process of simply following the steps.

CWMA believes the only downside of adding the worksheet to the Handbook is that, if adopted, it needs to be published in the handbook.

Worksheet for Packages Labeled by Volume When Using Gravimetric Test Procedure

Label Declaration	Converted to Fluid Ounce	Largest Declaration (Y=Yes, N=No)

Firm:
Date:
Commodity:

		1 st Package	2 nd Package	3 rd Package	4 th Package	5 th Package
1. Gross Weight						
2. Tare Wt	R _{t =}					
Net Wt	R _{c =}					
3. Flask Wt (full)				Converting MAV	to Decimal Pou	nds
4. Flask Wt (empty, v	wetted)			13. MAV in fl oz	(Table 2-6)	
5. Wt of Liquid (step	3 - 4)			14. MAV in lb (st	tep 13 x step 11)	
6. Volume of Flask (i	n fl oz)			Converting Aver	age Error to Flui	id Ounces
Temperature of Liqu	id			15. Avg. Error in lb (Box 18 x Box 2 of Test Report)		
				16. Avg. Error i ÷ step 11)	n fl oz. (step 15	
7. Liquid Density (step 5 ÷ step 6)						
8. Range of Densities						
9. Are densities w division?	ithin 1 scale	Yes	No 🗆			
(If no, use volumetric	e procedure in Se	c. 3.3)				
10. Average Tare Wt	(average of step	2)				
11. Average Liquid I	Density (average o	of step 7)				
12. Nominal Gross W	eight (step 11 x l	argest labeled vo	olume*) + step 10			
* Use largest labeled	volume converte	d to fl oz from to	p of page.			

270 OTHER ITEMS – DEVELOPING ITEMS

INTRODUCTION

NCWM established a mechanism to disseminate information about emerging issues which have merit and are of national interest. Developing items have not received sufficient review by all parties affected by the proposals or may be insufficiently developed to warrant review by the NCWM L&R Committee. The developing items listed are currently under review by at least one regional association, subcommittee, or work group.

The developing items are marked according to the specific NIST Handbook into which they fall: Handbook 130 or Handbook 133.

The Committee encourages interested parties to examine the proposals included in the appendices and to send their comments to the contact listed in each part.

The Committee asks that the regional weights and measures associations, subcommittees, and work groups continue their work to develop fully each proposal. Should an association, subcommittee, or work group decide to discontinue work on a developing item, the Committee asks that it be notified. When the status of an item changes because the submitter withdraws the item, the item will be listed in a table below. For more details on items that are moved from the Developing Items list to the Committee's main agenda, refer to the new reference number in the main agenda.

270-1 Add to NIST Handbook 130, Method of Sale Regulation

§ 1.14. Labeling Requirement of Drained Weight for Commodities Packed in a Liquid Medium (foods other than meat or poultry products under USDA jurisdiction)

Source: Western Weights and Measures Association (WWMA)

Proposal: Add Section 1.14. "Labeling Requirement of Drained Weight for Commodities Packed in a Liquid Medium (foods other than meat or poultry products under USDA jurisdiction)."

Add Section 1.14. to read as follows:

1.14. Labeling Requirement of Drained Weight for Commodities Packed in a Liquid Medium. - Drained Weight is the appropriate method of sale for products packed in a medium which is inedible or invariably discarded. Food items such as, but not limited to: wet pack shrimp, lobster meat, crabmeat, clams, olives, mushrooms, bamboo shoots, water chestnuts, cocktail onions, roasted peppers, and artichokes shall be labeled with a drained weight declaration.

- (a) <u>Drained weight is the weight of the solid food in a container after the packing medium has been</u> <u>drained away.</u>
- (b) <u>Packing medium includes water, brine, and acid based liquids.</u> Packing medium should not be construed to include oil based marinades which are generally considered part of the product.

Background: In 1978 the Food and Drug Administration published the Fair Packaging and Labeling Act with interpretations and guidelines. FDA Guide 7563 states that drained weight is the appropriate way to list net weight of contents for products that are packed in a medium which is inedible or invariably discarded. It lists as examples food items like wet pack shrimp, green olives, ripe olives, canned mushrooms, canned clams, and canned artichokes. Furthermore under Section 403 (d) of the Federal Food, Drug, and Cosmetic Act, a food is considered misbranded if its container is so made, formed, or filled as to be misleading. The FDA guide states it would be regarded as deceptive and in conflict with Section 403 (d) to replace part of the food in the container with excessive packing medium. This is true whether or not the label bears an accurate statement of the drained weight of the food.

Some net weight declarations accurately reflect the usable content while other declarations include the weight of the packing medium, causing an unfair business advantage and making value comparison impossible for the consumer.

As markets have changed and more value-added products are being made available to consumers, it is important to specify labeling requirements in order that businesses may compete equally and consumers may have adequate information to facilitate value comparisons. In addition, consumers rely on the weight declarations when deciding which products to buy for recipes and for dietary purposes.

This proposal was initiated because of a consumer complaint.

Discussion: The WWMA L&R Committee received no comments on this item. WWMA supports forwarding this item, as submitted, to the NCWM L&R Committee for placement on its agenda. WWMA requests that NIST coordinate discussions with the Federal Food and Drug Administration (FDA) for review and concurrence.

At the 2006 Central Weights and Measures Association Interim Meeting, an industry representative mentioned that the wording of the item is problematic because it expects the regulatory jurisdiction to make a judgment call regarding packing medium which is inedible or invariably discarded. Furthermore, the wording is very open-ended with respect to the products covered by this method of sale. Comment from the group was to look at past conference reports in relation to canned clams as guidance.

To comment on this item, please contact Roger Macey (CA), by telephone at (916) 229-3043; by fax at (916) 229-3026; or by email at <u>rmacey@cdfa.ca.gov.</u>

270-2 Amend NIST Handbook 130, Method of Sale Regulation Section 2.13.4. Declaration of Weight

Proposal: Amend Handbook 130, Method of Sale Regulation Section 2.13.4. "Declaration of Weight." as follows:

For the purpose of this regulation, when D is not known, the minimum density used to calculate the target net weight shall be 0.92 g/cm³ (when D is not known). For products labeled "High Density," "HD," or similar wording, the minimum density (D) used to calculate the target net weight shall be 0.95 g/cm³.

Background: Some manufacturers of polyethylene bags labeled as "High Density" or "HD" have been found to package and label products whose labeled net weights meet calculated target net mass/weights when employing a factor of 0.92 g/cm³. When a density factor of 0.95 g/cm³ is used, as appropriate, in the calculation for high density polyethylene materials, products commonly fail to meet the calculated target net mass/weight. Further inspection typically reveals that one or more of the labeled width, thickness, or count statements are inaccurate.

Some manufacturers appear aware that weights and measures officials are restricted to test high density film using the 0.92 g/cm³ value because the actual density value is not stated on the product label and the existing procedural guidelines do not address high density polyethylene materials. When testing at manufacturing locations, weights and measures officials are able to obtain information regarding the density of the product from the manufacturer. However, at distributor locations, density information is not available and officials must test using the 0.92 g/cm³ designated in Handbooks 130 and 133.

Conversations with manufacturers and review of technical data sheets from various manufacturers have indicated that 0.95 g/cm³ is an acceptable minimum density value for HD labeled polyethylene film.

Discussion: WWMA supports forwarding this item, as amended below, to be placed on the NCWM L&R Committee agenda.

Recommendation: Amend Handbook 130 Method of Sale Regulation § 2.13.4. Declaration of Weight as follows:

For the purpose of this regulation, when the density (D) is not known, the minimum density used to calculate the target net weight shall be 0.92 g/cm³ (when D is not known). For products labeled "High Density," "HD," or similar wording, when D is not known, the minimum density (D) used to calculate the target net weight shall be 0.95 g/cm³.

When the polyethylene commodity package is labeled with a specific density, the labeled density factor shall be used to calculate the target net weight. If the official determines that the labeled density

information is not accurate, the minimum density factors above shall be used to calculate the target net weight.

To comment on this item, please contact Jeff Humphreys (LA County) by telephone at (562) 940-8922, by fax at (562) 861-0278; by email at jeffh@acwm.co.la.ca.us.

270-3 Add Section 2.1.6. to NIST Handbook 130, Interpretations and Guidelines

Proposal: Add Section 2.1.6. to NIST Handbook 130 Interpretations and Guidelines as follows:

2.1.6. Labeling Requirements For Variable Weight Produce Items Sold In Clear Plastic Bags.

Interpretation:

For products, such as broccoli crowns, that are traditionally sold by variable weight as bulk produce items, it is not necessary that these produce items, when single or multiple units are packaged or wrapped in plastic film or bags, be marked with a net weight, unit price, and total price at the time the product is offered for retail sale. The FDA interpretation allows the determination of net weight at the point of sale. Also, a disclaimer statement on the package of "To be weighed at or before time of sale" is required consumer notification, assuming that there are scales at the Point of Sale. In addition, the retail price per weight must be displayed within a reasonable distance to the product when the product is displayed for the consumer at the store level. The customer must be provided with the net weight, unit price, and the total price at the time of sale.

Issue:

The NIST Weights and Measures Division (WMD) has received numerous requests for information regarding the labeling of produce items offered for sale in plastic bags. The bags may be "zip-lock" or not, may be open or closed, and may or may not have some product labeling on the bag. Industry and regulatory officials have requested guidance concerning the packaging and labeling requirements as they apply to these products when offered for sale. A similar issue was raised regarding bunches of bananas wrapped in plastic bags and offered for sale.

Background:

WMD staff reviewed the Uniform Weights and Measures Law, the Uniform Packaging and Labeling Regulation in Handbook 130, and the Food, Drug, and Cosmetic Act. An exemption to some labeling requirements was found in 21 CFR Part 101 that specifically addresses wrapped clusters of bananas. The Food, Drug, and Cosmetic Act preempts state laws where state laws are not identical to the Act for the products covered by the Act. The Food and Drug Administration (FDA) was consulted to obtain their interpretation regarding this issue. The FDA exemption and interpretation are reported below.

Summary:

The Food, Drug, and Cosmetic Act contains a specific exemption to some labeling requirements for wrapped clusters of bananas and allows the net weight to be determined at the time of sale (see wording below). FDA reported that the exemption probably was written specifically for wrapped clusters of bananas because, most likely, bananas were the only produce item using that method of packaging at the time the exemption was requested (around 1964). FDA indicated that the sale of other produce items in plastic is analogous to the sale of wrapped clusters of bananas; therefore, the exemption described in 21 CFR Part 100 also applies to other produce items, such as table grapes and broccoli crowns, for example.

References:

The Food, Drug, and Cosmetic Act (FDC Act) 21 CFR Title 21, Part 101, Subpart G, Section 101.100 (h) provides an explicit statement as it applied to bananas. 21 CFR Title 21, Part 101, Section 101.100 addresses exemptions from food labeling requirements. The text for the exemption is provided below. The exemption mentioned below is to FDC Act Section 403(e)(2), which states that a food package shall be deemed to be misbranded unless it bears a label containing an accurate statement of quantity of contents.

21 CFR Title 21, Part 101, Subpart G, Section 101.100 (h)(3):

"(i) Wrapped clusters (consumer units) of bananas of nonuniform weight intended to be unpacked from a master carton or container and weighed at or before the point of retail sale in an establishment other than that where originally packed shall be exempt from the requirements of section 403(e)(2) of the act during introduction and movement in interstate commerce and while held for sale prior to weighing:

Provided that

The master carton or container bears a label declaration of the total net weight; and the individual packages bear a conspicuous statement "To be weighed at or before the time of sale" and a correct statement setting forth the weight of the wrapper; using such tern as "wrapper tare ounce", the blank being filled in with the correct average weight of the wrapper used.

<u>Provided further, that it is the practice of the retail establishment to weigh the</u> individual packages either prior to or at the time of retail sale.

The act of delivering the wrapped clusters (consumer units) during the retail sale without an accurate net weight statement or alternatively without weighing at the time of sale shall be deemed an act which results in the product's being misbranded while held for sale. Nothing in this paragraph shall be construed as requiring net-weight statements for clusters (consumer units) delivered into institutional trade, provided that the master container or carton bears the required information."

The Act provides an exemption for Identity statements under specified conditions:

Identity:

"21 Code of Federal Regulations 101.100 (b) (3) for non-meat and non-poultry foods specifically exempts packages from identity statements if the identity of the commodity 'can easily be identified through the wrapper or container'".

"A statement of identity is not required if the identity of the product can easily be identified through the wrapper or container. This exemption does not apply to meat and poultry."

Presently, the NIST Handbook 130 Uniform Packaging and Labeling Regulation addresses Responsibility statement requirements as applicable only to packages "kept, offered...or sold at...other than the premises where packed" and, furthermore, provides an exemption to Quantity statements on packaged commodities intended to be weighed prior to or at time of sale:

Responsibility:

UPLR Section 5 states:

"Any package kept, offered or exposed for sale, or sold, at any place other than the premises where packed shall specify conspicuously on the label of the package the name and address of the manufacturer, packer or distributor."

This exempts those packages 'kept, offered or exposed for sale, or sold' on the premises where packed from the <u>need for a responsibility statement</u>. When retailers remove wrapped clusters of produce from a shipping <u>container</u>, they often inspect the packages for quality and make adjustments such as removing damaged product before putting them in a bulk display; they are, for all practical purposes, repackaging the produce and assuming <u>responsibility for it.</u>

Quantity (Exemption for Random Weight Packages): UPLR Section 11.26 states:

"Individual packaged commodities put up in variable weights and sizes for sale intact, and intended to be weighed and marked with the correct quantity statement prior to or at the time of retail sale, are exempt from a declaration of net quantity."

"Random weight packages that will be weighed at the time of sale do not need a quantity statement. This regulation does not address package closure and the exemption is not dependent on the package being open or closed."

Background/Discussion: In recent years more and more produce items are being packed in clear plastic wrappers, of various sizes, in order to maintain the integrity and sanitation of the product (i.e., clusters of grapes or broccoli crowns). These products are being shipped to retail stores in fully labeled non-consumer containers. The retail stores then take the plastic wrapped produce out of the boxes and stack it in bulk retail displays on the produce counter, advertising it for sale for a certain price per pound. The consumer selects the amount desired and brings it to the checkout counter where it is weighed and the total price is determined.

This interpretation recognizes and clarifies the labeling requirements for an existing retail trade practice that is becoming more and more common. It will provide for uniform labeling guidance for both industry and enforcement officials.

NIST Handbook 130 "Uniform Packaging and Labeling Regulation" requires packaged commodities to provide accurate and adequate information as to **identity**, **quantity** of contents, and the name and address of a **responsible party**. However, if certain conditions exist, there are exemptions from these requirements, as cited under the proposed "Reference" section above.

WWMA received no comments on this item and supports this item as amended below:

Add Section 2.1.6. to NIST Handbook 130 Interpretations and Guidelines as follows:

2.1.6. Labeling Requirements for Variable Weight Produce Items Sold in Clear Bags or Wrapping.

Issue: The NIST Weights and Measures Division (WMD) has received numerous requests for information regarding correct labeling of produce items offered for sale in clear bags or overwrapped in clear sheeting. Such bags may or may not have a "zip-lock" feature, may be open or closed, and the bags or sheeting may or may not have some product labeling. Industry and regulatory officials have requested guidance concerning packaging and labeling requirements as they apply to these products when offered for sale. A similar issue was raised regarding bunches of bananas wrapped in plastic bags and offered for sale.

Background: WMD staff reviewed the Uniform Weights and Measures Law, the Uniform Packaging and Labeling Regulation (UPLR) in Handbook 130, and the Food, Drug, and Cosmetic Act (FDC Act). A specific exemption to quantity statement labeling requirements is established in Title 21 Code of Federal Regulations (CFR) Part 101, specifically addressing wrapped clusters of bananas. An exemption to identity statement labeling requirements for non-

meat and non-poultry products is also established in 21 CFR Part 101. Additional exemptions to Responsibility and Quantity statements, under specific conditions, are established in the UPLR.

The Food, Drug, and Cosmetic Act preempt state laws when such state laws are not identical to the Act for any products covered by the Act. The Food and Drug Administration (FDA) was consulted to obtain its interpretation regarding this issue. The FDA exemption and interpretation are reported below.

Interpretation: The Food, Drug, and Cosmetic Act contains a specific exemption from quantity statement labeling requirements for wrapped clusters of bananas and allows the net weight to be determined at the time of sale (see wording below). FDA reported that the exemption was written specifically for wrapped clusters of bananas because, most likely, bananas were the only produce commodity commonly distributed under that method of packaging at the time the exemption was requested (around 1964). FDA indicated that the sale of other produce items in clear wrapping or bags is analogous to the sale of wrapped clusters of bananas; therefore, the exemption described in 21 CFR Part 100 also applies to other produce items, such as table grapes and broccoli crowns.

Consequently, for products that are traditionally sold by variable weight as bulk produce items, it is not required that these produce items, when single or multiple units are packaged or wrapped in clear film or bags, be marked with a net weight, unit price, and total price at the time the product is offered for retail sale. The FDA interpretation allows the determination of net weight at the point of sale, provided that a scale is available to weigh the commodity at the point of sale. A disclaimer statement on the package stating, "To be weighed at or before time of sale" is required consumer notification. In addition, the retail price per unit of weight is typically displayed to the consumer within a reasonable distance of the product display at the retail store. The customer must be provided with the net weight, unit price, and the total price at the time of sale.

References: The Food, Drug, and Cosmetic Act (FDC Act) 21 CFR Title 21, Part 101, Subpart G, Section 101.100 (h) provides an explicit statement applicable to the sale of bananas. 21 CFR, Part 101, Section 101.100 addresses exemptions from food labeling requirements (text provided below). The exemption is from FDC Act Section 403(e)(2), which states that a food package shall be deemed to be misbranded if it does not bears a label containing an accurate statement of quantity of contents.

21 CFR Title 21, Part 101, Subpart G, Section 101.100 (h)(3) states:

"(i) Wrapped clusters (consumer units) of bananas of nonuniform weight intended to be unpacked from a master carton or container and weighed at or before the point of retail sale in an establishment other than that where originally packed shall be exempt from the requirements of section 403(e)(2) of the act during introduction and movement in interstate commerce and while held for sale prior to weighing:

Provided that

The master carton or container bears a label declaration of the total net weight; and the individual packages bear a conspicuous statement "To be weighed at or before the time of sale" and a correct statement setting forth the weight of the wrapper; using such tern as "wrapper tare ounce", the blank being filled in with the correct average weight of the wrapper used.

Provided further, that it is the practice of the retail establishment to weigh the individual packages either prior to or at the time of retail sale.

The act of delivering the wrapped clusters (consumer units) during the retail sale without an accurate net weight statement or alternatively without weighing at the time of sale shall be deemed an act which results in the product's being misbranded while held for sale. Nothing in this paragraph shall be construed as requiring net-weight statements for clusters (consumer units) delivered into institutional trade, provided that the master container or carton bears the required information."

As discussed above, FDA indicated that the sale of other produce items in clear wrappings or bags is analogous to the sale of wrapped clusters of bananas, and an exemption to quantity statement requirements applies to other produce items, such as table grapes and broccoli crowns.

The FDC Act provides an exemption from Identity statements requirements under specified conditions:

Identity: 21 CFR Section 101.100 (b) (3) for non-meat and non-poultry foods specifically exempts packages from identity statement requirements if the identity of the commodity "can easily be identified through the wrapper or container."

"A statement of identity is not required if the identity of the product can easily be identified through the wrapper or container. This exemption does not apply to meat and poultry."

NIST Handbook 130 Uniform Packaging and Labeling Regulation:

Presently, the NIST Handbook 130 Uniform Packaging and Labeling Regulation (UPLR) addresses responsibility statement requirements as applicable only to packages "kept, offered...or sold at...other than the premises where packed" and, furthermore, provides an exemption to quantity statements on packaged commodities intended to be weighed prior to or at time of sale:

Responsibility: UPLR Section 5 states:

"Any package kept, offered or exposed for sale, or sold, at any place other than the premises where packed shall specify conspicuously on the label of the package the name and address of the manufacturer, packer or distributor."

The responsibility statement requirement in UPLR Section 5 applies only to packages sold from other than the premises where packed. Conversely, when offered, exposed, and/or sold from the premises where packed, the responsibility statement requirement does not apply. When retailers remove wrapped clusters of produce from a shipping container, they often inspect the packages for quality and make adjustments such as removing damaged product before rewrapping and offering the packages for sale. In doing so, these retailers are repackaging the produce and assuming responsibility for it. In such circumstances, packages need not be labeled with a responsibility statement.

Quantity (Exemption for Random Weight Packages): UPLR Section 11.26 states:

"Individual packaged commodities put up in variable weights and sizes for sale intact, and intended to be weighed and marked with the correct quantity statement prior to or at the time of retail sale, are exempt from a declaration of net quantity."

Random weight packages that are to be weighed at the time of sale are not required to be labeled with a quantity statement. This regulation does not address package closure and the exemption is not dependent on the package being open or closed.

Summary:

Variable weight produce commodities sold in clear bags or sheeting are exempt from specific package labeling requirements under specific conditions as follows:

- Exempt from identity statement requirement when the product identity can be readily determined through the packaging
- Exempt from responsibility statement requirement when packaged or repackaged upon the premises where kept, offered, exposed for sale, or sold
- Exempt from quantity statement requirement when all of the following applies:
 - Labeled with the statement, "To be weighed at or before the time of sale"
 - Labeled with a statement, "Wrapper tare _ounce" or similar wording
 - The retailer has approved scale(s) in operation at the point of sale
 - The retailer weighs the commodity and provides net weight information at the time of sale

To comment on this item, please contact Roger Macey (CA), by telephone at (916) 229-3043; by fax at (916) 229-3026; or by email at <u>rmacey@cdfa.ca.gov</u> or Jess Urbina (Ocean Mist Farms) by telephone at (831) 970-7321.

270-4 Amend Handbook 133, Chapter 4.7 Polyethylene Sheeting – Test Procedure

Proposal: Amend Handbook 133, Chapter 4.7 Polyethylene Sheeting – Test Procedure

Amend Asterisked Footnote below Step 3 as follows:

*Determined by ASTM Standard D 1505-98 (*or latest issue*) "Standard Method of Test for Density of Plastics by the Density Gradient Technique." For the purpose of this handbook, <u>when the actual density is not known</u>, the minimum density <u>used to calculate the target net weight</u> shall be 0.92 g/cm³ when the actual density is not known. For products labeled "High Density," "HD," or similar wording, the minimum density (D) used to calculate the target net weight shall be 0.95 g/cm³.

Background: Some manufacturers of polyethylene bags labeled as "High Density" or "HD" have been found to package and label products whose labeled net weights meet calculated target net mass/weights when employing a factor of 0.92 g/cm³. When a density factor of 0.95 g/cm³ is used, as appropriate, in the calculation for high density polyethylene materials, products commonly fail to meet the calculated target net mass/weight. Further inspection typically reveals that one or more of the labeled width, thickness, or count statements are inaccurate.

Some manufacturers appear aware that weights and measures officials are restricted to test high density film using the 0.92 g/cm³ value because the actual density value is not stated on the product label and the existing procedural guidelines do not address high density polyethylene materials. When testing at manufacturing locations, weights and measures officials are able to obtain information regarding the density of the product from the manufacturer. However, at distributor locations, density information is not available and officials must test using the 0.92 g/cm³ designated in Handbooks 130 and 133.

Conversations with manufacturers and review of technical data sheets from various manufacturers have indicated that 0.95 g/cm³ is an acceptable minimum density value for HD labeled polyethylene film.

Discussion: The WWMA L&R Committee received no comments on this item, other than those offered for LR-2.

Recommendation: WWMA supports (in consideration of the same issues discussed in LR-2) forwarding this item, as amended below, to be placed on the NCWM L&R Committee agenda.

Amend Handbook 133, Chapter 4.7 Polyethylene Sheeting – Test Procedure as follows:

*Determined by ASTM Standard D 1505-98 (or latest issue) "Standard Method of Test for Density of Plastics by the Density Gradient Technique." For the purpose of this handbook, when the actual density (D) is not known, the minimum density used to calculate the target net weight shall be 0.92 g/cm³ when the actual density is not known. For products labeled "High Density," "HD," or similar wording, when D is not known, the minimum density (D) used to calculate the target net weight shall be 0.95 g/cm³. When the polyethylene commodity package is labeled with a specific density, the labeled density factor shall be used to calculate the target net weight. If the official determines that the labeled density information is not accurate, the minimum density factors above shall be used to calculate the target net weight.

To comment on this item, please contact Jeff Humphreys (LA County) by telephone at (562) 940-8922, by fax at (562) 861-0278; by email at jeffh@acwm.co.la.ca.us.

270-5 Amend Section 2.2.1. in Handbook 130 Uniform Engine Fuels Regulation - Premium Diesel Lubricity

Source: Southern Weights and Measures Association (SWMA)

Proposal: Amend Section 2.2.1.in Handbook 130 Uniform Engine Fuels, Petroleum Products, and Automotive Lubricants Regulation as follows:

2.2.1. Premium Diesel Fuel. – All diesel fuels identified on retail dispensers, bills of lading, invoices, shipping papers, or other documentation with terms such a premium, super, supreme, plus, or premier must conform to the following requirements:

- (a) **Cetane Number.** A minimum cetane number of 47.0 as determined by ASTM Standard Test Method D 613.
- (b) Low Temperature Operability. A cold flow performance measurement which meets the ASTM D 975 tenth percentile minimum ambient air temperature charts and maps by either ASTM Standard Test Method D 2500 (Cloud Point) or ASTM Standard Test Method D 4539 (Low Temperature Flow Test, LTFT). Low temperature operability is only applicable October 1 March 31 of each year.
- (c) **Thermal Stability.** A minimum reflectance measurement of 80 % as determined by ASTM Standard Test Method D 6468 (180 min, 150 °C).
- (d) **Lubriticity.** A maximum wear scar diameter of 520 μ m as determined by ASTM D 6079. If an enforcement jurisdiction's single test of more than 560 μ m is determined, a second test shall be conducted. If the average of the two tests is more than 560 μ m, the sample does not conform to the requirements of this part.

Background: A member of the petroleum industry believes the test and associated tolerances for lubricity on premium diesel specified in Section 2.2.1.(d) are inconsistent with that for regular diesel. Effective January 1, 2005, the test tolerance for regular diesel lubricity will be the ASTM D 6079 reproducibility of 136 µm (see ASTM D 975-04b). NCWM has chosen to accept the ASTM reproducibility limits for all diesel (D 975) and gasoline (D 4814) properties (see Section 7.2.2., Reproducibility), but has chosen a different reproducibility limit for premium diesel lubricity without providing any explanation as to why the ASTM reproducibility limit is insufficient. If NCWM intends to impose a stricter lubricity requirement for premium diesel, it should designate a tighter specification for this property instead of a different test tolerance (e.g., for regular and premium gasoline, premium has a different octane specification than regular but the test tolerance is the same). ASTM reproducibility limits are, by definition, based on establishing a 95 % probability that product that should pass, will pass. Applying an average test as specified in Section 2.2.1.(d) reduces this probability to only 80 %.

The Committee received comments from several members of the Premium Diesel Work Group (Work Group) who do not support the item as presented by the petroleum industry member. Work Group members believed the process that led to the current definition was very thorough and complete and the premium diesel lubricity requirements were established with a full understanding of their implications. The Work Group members felt that knowledgeable individuals provided input to the process, which lead to the consensus position contained in the current regulation. The work being done by the Work Group was reported at meetings of ASTM Subcommittee E-2 every six months. The current regulation has been endorsed by the American Petroleum Institute, the Engine Manufacturer's Association, and NCWM.

Prior to this requirement being adopted, the ASTM Lubricity Task Force conducted a great deal of research on this topic. Based on their research, the ASTM Lubricity Task Force had concluded that a limit of 520 µm would meet the requirements of equipment in the field. Since the passage of this model regulation, ASTM included a lubricity requirement for No. 1 and No. 2 diesel fuel effective January 1, 2005. The ASTM requirement is also 520 µm.

Work Group members reported that when this regulation was being written fuels with adequate lubricity provided a functional benefit to the end user. The Work Group agreed with the ASTM Lubricity Task Force that 520 μ m was the correct limit to set for premium diesel. However, the Work Group's review process also indicated increased pump wear for fuels with High-Frequency Reciprocating Rig (HFRR) values greater than 560 μ m. The current reproducibility value of the HFRR test method would have placed enforcement well beyond the 560 μ m level, essentially allowing fuels with little lubricity protection to be sold as Premium. The Work Group believed they could not recommend a premium fuel standard that would permit excessive pump wear. Using the statistical tools provided in ASTM D 3244, the Work Group evaluated an enforcement limit of 560 μ m. The statistical tools indicated that a single laboratory reporting the assigned test value would have an enforcement limit of approximately 80 % probability of acceptance, while the average of two separate laboratories reporting the assigned test value would have an enforcement limit of approximately 80 %

probability of acceptance. It was agreed that for a premium fuel the average of two test results was the best approach given the current test methods and precision available. Therefore, if a test exceeds 560 μ m, then a second test must be run. The average of the two tests must exceed 560 μ m before a violation would occur. At this time, the Work Group members believe this remains the best approach.

The Committee has forwarded this proposal to the Petroleum Subcommittee for review and has requested that the Subcommittee provide the Committee with its recommendation. The Subcommittee has requested that this item remain on the Committee's agenda as a developing issue until the Subcommittee can make a recommendation.

Contact: NCWM Petroleum Subcommittee, Ron Hayes, Chair, (573) 751-2922, ron.hayes@mda.mo.gov.

Discussion: At the WWMA 2006 Annual Meeting, the WWMA L&R Committee received only one comment regarding this item, acknowledging the ongoing review by the Petroleum Subcommittee. WWMA notes that the NCWM L&R Committee has forwarded the proposal for review by the Petroleum Subcommittee and agrees that this item should remain Developmental pending the Subcommittee's recommendation.

At its 2006 Interim Meeting, CWMA indicated that the NCWM Petroleum Subcommittee will make recommendations after ASTM improves the test method's precision and after the conclusion of the CRC test program. The CWMA L&R Committee is awaiting recommendation from the NCWM Petroleum Subcommittee.

270-6 Amend Handbook 130 Interpretations and Guidelines Section 2.3.2. Guidelines for the Method of Sale of Fresh Fruits and Vegetables

Source: Northeast Weights and Measures Association (NEWMA)

Proposal: Amend Handbook 130 Interpretations and Guidelines Section 2.3.2. to recognize and support innovation in modern retail food marketing approaches at all forms of outlets from typical grocery stores to the age-old farm markets.

Discussion: The method of sale guidelines for the sale of fresh fruits and vegetables that currently appear in Handbook 130 are outdated and in need of revision. The present guidelines do not recognize current retailing practices and are not expansive enough to cover many exotic and unusual fruits and vegetables that are becoming more common in the marketplace. Additionally, the present guidelines do not take into consideration the necessary limitations experienced by retailers at roadside stands and farmers markets.

The original proposal for this item reflected input from only a single jurisdiction. The Committee was informed that several industry associations have requested an opportunity to review and respond to this proposal. The Committee believes there are several factual errors within the classifications of produce provided, and there are several types of produce still not covered by the proposal provided. The Committee has made this item developmental so it may be more fully developed with input from jurisdictions throughout the country and from affected industry associations and businesses.

Discussion: At its 2006 Interim Meeting, CWMA heard a comment that this item should be moved to informational for a year. The body of the guideline needs to be circulated within CWMA before it becomes a voting item.

The WWMA L&R Committee received no comments regarding this item. It was noted by the Committee Chairman that all are encouraged to provide any input on this item to the NCWM L&R Committee.

Please contact Ross Andersen (NY Bureau of Weights and Measures) by telephone at (518) 457-3146 or by email at <u>ross.andersen@agmkt.state.ny.us</u> for comments or further information.

270-7 Amend Handbook 133 Section 2.3, Moisture Allowances to Provide Clearer Guidance.

Source: Northeast Weights and Measures Association (NEWMA)

Proposal: Amend Handbook 133 Section 2.3, Moisture Allowances (pages 17 through 19 of the Handbook) to provide clearer guidance.

Background: The issue of moisture loss is complex. NIST Handbook 133 currently provides specific guidance on the determination and application of moisture allowances for only a limited number of commodities. Concerns have been raised that this guidance is confusing and difficult to understand, particularly with regard to when moisture loss is applied (i.e., at the time of inspection or subsequent to the inspection). Requests have been received to reword this section to make it easier to understand and apply.

In addition, NIST Handbook 133 provides little guidance on the determination and application of moisture allowances for commodities other than those specifically listed. Weights and measures jurisdictions across the country have been struggling with how to properly handle moisture loss during packaging inspections and need more definite guidance on this issue.

The Committee does not believe it has the time or expertise to address properly the issue of moisture loss within the structure of NCWM. The Committee has decided to request activation of a NIST Moisture Loss Work Group to establish more effective and extensive guidance to NCWM regarding the proper determination and application of moisture loss.

Discussion of this Item by WWMA:

The WWMA L&R Committee received explanation from Ken Butcher, NIST, noting that a meeting was tentatively planned for November 2006, but was delayed to allow time for everyone to identify and agree on the issues to be addressed by the group to ensure that expectations for the meeting results were clear. The Weights and Measures Division (WMD) has agreed to fund the travel and attendance of one NCWM representative. Leading issues include providing additional guidance in Handbook 133 regarding the determination and application of appropriate moisture loss allowances in package inspections, with noted examples including how to address gel soaker pads in poultry/meat packages as well as how to determine moisture allowances for pasta, rice, and other commodities for which there exist no established moisture loss allowances. Additionally, guidance regarding application of moisture loss allowances at the point-of-pack should be addressed.

An industry representative urged involvement in the meeting and ensuing work on Handbook 133 amendments from the Food and Drug Administration (FDA) and the United States Department of Food and Agriculture (USDA) to ensure input and consensus from all relevant agencies. He further emphasized the need to review and consolidate all decisions and directives from any and all court rulings regarding moisture loss issues. Factors to be considered in determining and applying appropriate moisture loss allowances and influences upon such losses include commodity stability limits and varying environmental conditions at packing plants such as relative humidity and constant temperature rooms maintained at different temperature levels. The industry representative also urged that guidance be provided to industry members regarding the types of data needed to be tracked and provided by packers/manufacturers in addressing moisture allowance determinations.

Discussion of this Item by the Central Weights and Measures Association at it 2006 Interim Meeting: A comment was heard from industry that this needs to be addressed in order for businesses to be competitive. USDA and FDA need to be involved in the development of this item. A meeting is tentatively scheduled for November prior to the NCWM Interim Meeting. There was general agreement that in order for this meeting to be effective, the USDA and FDA must be present. Comments were heard in support of using the New York proposal to correct the error in Handbook 133.

Please contact Tom Coleman, NIST Moisture Loss Work Group Technical Advisor by telephone at (301) 975-4868 or by email at t.coleman@nist.gov for additional information or comments.

James Cassidy, Chairman, Cambridge, Massachusetts

Joe Benavides, Texas Vicky Dempsey, Montgomery County, Ohio Roger Macey, California Stephen Benjamin, North Carolina

Vince Orr, ConAgra Foods, Associate Member Representative Doug Hutchinson, Canada, Technical Advisor Brian Lemon, Canada, Technical Advisor Tom Coleman, NIST, Technical Advisor

Laws and Regulations Committee

L&R Committee 2007 Interim Agenda

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Specifications and Tolerances Committee Interim Agenda

Michael J. Sikula, Chairman Assistant Director New York Bureau of Weights and Measures

300 INTRODUCTION

The Specifications and Tolerances (S&T) Committee ("Committee") will address the following items at its Interim Meeting. All items are listed below in Table A by Reference Key Number. The headings and subjects apply to NIST Handbook 44, "Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices." The Appendices to the Report are listed in Table B. The acronyms for organizations and technical terms used throughout the agenda are identified in a glossary in Table C. In some cases background information will be provided for an item. The fact that an item appears on the agenda does not mean that the item will be presented to the Conference for a vote. The Committee will review its agenda at the Interim Meeting and may withdraw some items, present some items for information meant for additional study, issue interpretations, or make specific recommendations for change to NIST Handbook 44 which will be presented for a vote at the Annual Meeting.

The recommendations are statements of proposals and are not necessarily those of the Committee. Suggested revisions to the handbook are shown in **bold face print** by striking out information to be deleted and <u>underlining</u> information to be added. Requirements that are proposed to be nonretroactive are printed in **bold-faced** *italics*.

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Note: The policy of NIST 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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	Glossary of Acronyms				
CC	Certificate of Conformance	NCWM	National Conference on Weights and Measures,		
		1'	Inc		
CWMA	Central Weights and Measures Association	NEWMA	Northeastern Weights and Measures Association		
EPO	Examination Procedure Outline	NIST	National Institute of Standards and Technology		
GAS	Grain Analyzer Sector	NTEP	National Type Evaluation Program		
GMM	Grain Moisture Meters	NTETC	National Type Evaluation Technical Committee		
GPMA	Gasoline Pump Manufacturers Association	RMFD	Retail Motor-Fuel Dispenser		
H44	NIST Handbook 44	SI	International System of Units		
H130	NIST Handbook 130	SMA	Scale Manufacturers Association		
LMD	Liquid-Measuring Device	SWMA	Southern Weights and Measures Association		
LPG	Liquefied Petroleum Gas	WMD	Weights and Measures Division		
MMA	Meter Manufacturers Association	WWMA	Western Weights and Measures Association		
MFM	Mass Flow Meter	USNWG	NIST/OIML U.S. National Working Group		
"Handbo	ok 44" means the 2007 Edition of NIST Ha	ndbook 44 "	Specifications, Tolerances, and Other Technical		
Requirem	Requirements for Weighing and Measuring Devices"				
"Handbo	"Handbook 130" means the 2006 Edition of NIST Handbook 130 "Uniform Laws and Regulations in the Areas of				
Legal Me	Legal Metrology and Fuel Quality."				
Note: NIST does not imply that these acronyms are used solely to identify these organizations or technical topics.					

Table C

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

310 GENERAL CODE

310-1 G-S.2. Facilitation of Fraud

Source: Western Weights and Measures Association (WWMA)

Recommendation: Amend Handbook 44, Section 1.10. General Code Paragraph G-S.2. as follows:

G-S.2. Facilitation of Fraud. - All equipment and all mechanisms, and devices, software, and programmable components attached, associated or interfaced thereto or used in connection therewith shall be so constructed, assembled, and installed, programmed, and/or coded for use such that they do not facilitate the perpetration of fraud.

Background/Discussion: This proposal modifies the language in Paragraph G-S.2. to clarify that the prohibition against facilitating fraud applies to the electronically programmed and coded components of weighing and measuring devices to address electronic manipulation or alteration. Some argue the existing language in Section 1.10. General Code. Paragraph G-S.2. Facilitation of Fraud is intended to address only hardware components of weighing and measuring devices. That is, "equipment, mechanisms, and devices" and the mechanics of how they are "constructed, assembled, and installed" appear to deal with tangible components. Fraud issues in the past ten years involved: (1) altering, manipulating, or interfering with software interfaced or installed in equipment; (2) microprocessor issues such as additional pulser units hidden in gas pumps and taximeters; and (3) software programs permitting manipulation of motor truck scale data used to generate weighmaster certificates.

WWMA, CWMA, and SWMA recommended this item move forward for a vote.

NEWMA recommended this item be referred to the NTETC Software Sector for review and input.

310-2 G-S.5.6.1. Recorded Representation of Metric Units on Equipment with Limited Character Sets and Table 1. Recorded Representation of Metric Units on Equipment with Limited Character Sets

Source: Southern Weights and Measures Association (SWMA)

Recommendation: Amend Paragraph G-S.5.6.1. and Table 1. as follows:

G-S.5.6.1. <u>Indications and</u> Recorded Representation of <u>Metric</u>-Units-on <u>Equipment with Limited</u> <u>Character Sets. – Appropriate Abbreviations.</u>

(a) For equipment manufactured after January 1, 200X, the appropriate defining symbols are shown in NIST Special Publication SP 811 "Guide for the Use of International System of Units (SI) and Handbook 44 Appendix C–General Tables of Units of Measurement."

Note: SP 811 can be viewed or downloaded at http://physics.nist.gov/cuu/pdf/sp811.pdf. (Added 200X)

(b) The appropriate defining symbols on equipment manufactured prior to January 1, 200X, with limited character sets are shown in Table 1. <u>Representation of Units on Equipment Manufactured</u> prior to January 1, 200X, with Limited Character Sets. (Added 1977) (Amended 200X)

Table 1.						
	Recorded Representation of Metric Units on					
Equip	ment <u>Manufactured p</u>	rior to January 1, 2001	X, with Limited Chara	icter Sets		
			Representation			
		Form I	For	m II		
Name of Unit	International symbol (common use symbol)	(double case)	(single case lower)	(single case upper)		
		Base SI units				
meter	m	m	m	М		
kilogram	kg	kg	kg	KG		
	Derived SI units					
newton	Ν	Ν	n	Ν		
pascal	Ра	Ра	ра	PA		
watt	W	W	W	W		
volt	V	V	v	V		
degree Celsius	°C	°C	°c	°C		
	Other units					
liter	l or L	L	1	L		
gram	g	g	g	G		
metric ton	t	t	tne	TNE		
bar	bar	bar	bar	BAR		

Background/Discussion: At its fall 2006 Annual Meeting, SWMA reviewed a proposal from the Weighing Sector to amend Paragraph G-S.5.6.1. The amendment would require abbreviations for SI units as specified in NIST Special Publication 811 "Guide for the Use of International System of Units (SI) and Handbook 44 Appendix C – General Tables of Units for both indications and recorded representations on new technology. The amendment would also continue to permit exceptions to those guidelines for older equipment with limited character sets. NIST WMD has received inquiries from device manufacturers regarding how to apply the requirements in Table 1. for the abbreviation of SI units. There appears to be confusion about the intent of Table 1. unless one is directed to review Paragraph G-S.5.6.1. in conjunction with Table 1. Additionally, there are devices where abbreviations for SI units may be confused with other abbreviations when used in devices designed with or capable of indicating and/or recording in other units of measure (e.g., inch-pound units) or with identifiers for measurement values such as gross, tare, and net (G, T, N).

Handbook 44 Paragraph G-S.5.6.1. was originally added to Handbook 44 in 1977 to address concerns about equipment with limited printing capabilities, that is, with either upper or lower case characters only. If a recording element, interfaced with a weighing system, is equipped with upper case characters only, it will print the symbol for kilogram as "KG." It was the NCWM S&T Committee's view that to require a lower case character capability solely to provide the appropriate symbol in lower case character ("kg") would be cost prohibitive. Further, the Committee saw no problem in identifying "KG" as representing kilograms just as there is no problem in identifying the abbreviation for pound as "LB" or "lb." The Committee also reviewed International Standard ISO 2955, which sets forth guidelines for the representation of SI and other units for use in systems with limited character sets.

WMD believes that permitting exceptions for abbreviations of SI units of measure is no longer necessary when considering advances in printer and display technology.

SWMA supported the proposal and agreed to forward it to the NCWM S&T Committee with a recommendation that it be a voting item on the Committee's 2007 agenda.

310-3 G-S.8.1. Multiple Weighing or Measuring Elements with a Single Provision for Sealing

Source: Carryover Item 310-3. (This item originated from the Western Weights and Measures Association (WWMA) and first appeared on the Committee's 2006 agenda.)

Recommendation: Add a new Paragraph G-S.8.1. as follows:

G-S.8.1. Multiple Weighing or Measuring Elements with a Single Provision for Sealing. - A change to any metrological parameter (calibration or configuration) of any weighing or measuring element shall be individually identified.

[Nonretroactive as of January 1, 200X]

<u>Note:</u> Examples of acceptable identification of a change to the metrological parameters of a weighing or measuring element include, but are not limited to:

- (1) <u>a broken, missing, or replaced physical seal on an individual weighing, measuring, or indicating element or active junction box;</u>
- (2) a change in a calibration factor or configuration setting for each weighing or measuring element:
- (3) <u>a display of the date of or the number of days since the last calibration or configuration event for</u> <u>each weighing or measuring element; or</u>
- (4) <u>counters indicating the number of calibration or configuration events per weighing or measuring element.</u>
- (Added 200X)

Background/Discussion: The Committee believes a General Code requirement for identification of adjustments to individual weighing or measuring elements is appropriate regardless of the device type when systems have multiple weighing or measuring elements with a single provision for sealing. Initially, the proposal was developed to add to all the liquid-measuring device codes a requirement for identifying when an adjustment is made to <u>any</u> measuring device which has multiple measuring elements, but is equipped only with a single provision for sealing the adjustment mechanism. After rejecting a meter for not meeting performance requirements, jurisdictions reported difficulty in determining whether or not repairs or adjustments were made to that meter. During the subsequent inspection, an official might have to test multiple grades or blends to confirm the rejected meter had been corrected. The proposed requirement is similar to the current requirement in Section 3.30. Paragraph S.2.2.1. Multiple Measuring Elements with a Single Provision for Sealing.

The Committee has heard from the weighing industry that the proposal is not appropriate for all devices. The Committee believes it is important to be sure no specific Handbook 44 codes are adversely affected by placing the requirements in the General Code; therefore, the Committee agreed to make the proposal an information item to provide the opportunity for the National Type Evaluation Technical Committee Sectors and the regional weights and measures associations to evaluate the item further, especially for any adverse impact on a particular device type(s).

A General Code requirement addresses all possible device types, including weighing systems, and any scenario where metrological parameters (calibration or configuration) have a single means for security. The list of acceptable means for individually identifying a change to a metrological parameter addresses devices where features are accessed through an indicator or active junction box, but is not meant to be all-inclusive. Examples of weighing systems that have multiple weighing elements connected to a single indicator such that the calibration of each is controlled by a single seal include "in-and-out" weighing systems, shipping scale systems equipped with at least two platforms with different capacities connected to a single indicator, and multiple platform vehicle scales and axle-load weighers used for highway load enforcement or for truck operators' use such as "Cat Scales." Additionally, NTEP has evaluated indicators with the ability to support up to as many as ten weighing elements.

At the July 2006 NCWM Annual Meeting, the Committee received a comment that if the proposal is adopted in 2007, then LMD Code Paragraph S.2.2.1. would be redundant and should be deleted.

At their fall 2006 meetings CWMA, NEWMA, SWMA, and WWMA agreed the proposal should move forward for a vote as written. CWMA agreed that if this item is adopted, LMD Code Paragraph S.2.2.1. becomes redundant and should be deleted. WWMA agreed the proposal should apply to all device technologies where multiple components with metrological functions are secured by a single seal. WWMA also heard that there are weighing devices with multiple load-receiving elements interfaced to a single indicator (where sealing occurs) that have the ability to track changes to metrological parameters through an audit trail. Devices with an event logger would comply with the proposal. Devices utilizing only common counters for calibration and configuration parameters that increment one time when one or more

weighing or measuring element has been accessed would still need an additional means, such as a calibration factor for each element, to identify that changes were made to a particular element.

For additional background information, refer to the Committee's 2006 Final Report.

320 SCALES

320-1 S.1.1.(c) Zero Indication; Requirements for Markings or Indications for Other than Digital Zero Indications

Source: Carryover Item 320-1. (This item originated from the Committee and first appeared on its 2004 agenda.)

Recommendation: Amend Paragraph S.1.1.(c) as follows:

S.1.1. Zero Indication.

- (a) On a scale equipped with indicating or recording elements, provision shall be made to either indicate or record a zero-balance condition.
- (b) On an automatic-indicating scale or balance indicator, provision shall be made to indicate or record an out-of-balance condition on both sides of zero.
- (c) A zero-balance condition may be indicated by other than a continuous digital zero indication, provided that an effective automatic means is provided to inhibit a weighing operation or to return to a continuous digital indication when the scale is in an out-of-balance condition <u>and is marked or includes supplemental</u> <u>indications to indicate that the "other than continuous digital zero indication" represents a no-load</u> <u>condition of the scale</u>.

(Added 1987) (Amended 1993 and 200X)

Note: The markings or supplemental indications in S.1.1.(c) are not required if, prior to the start of a transaction: (1) operator intervention is required to verify the zero-balance condition with a digital zero indication, or (2) for a scale equipped to indicate a zero-balance condition by a digital zero indication, the scale automatically resets to a digital zero indication. (Added 200X)

(Amended 1987)

Background/Discussion: The proposed changes to the requirement are intended to clarify that all primary indicators on scales using anything other than a digital zero indication (e.g., scrolling messages, dashes, etc.) to indicate zero require additional markings or indications to inform customers the scale is at a zero-balance condition. No markings are necessary on these devices when operator intervention is required to return the indication to a digital zero before conducting a transaction. The proposal addresses instances where the OEM elects to display rather than mark the information (i.e., supplemental indications). The proposed changes are meant to be applied retroactively and, therefore, apply to all equipment including self-service applications that have undergone type evaluation.

The proposal is more than a simple clarification or housekeeping item. The proposed language is not in conflict with type evaluation procedures in Publication 14 (a document derived from Handbook 44 requirements). The proposal is warranted because of ongoing disagreements between NTEP laboratories at type evaluation on whether or not a scale complies with Paragraph S.1.1.(c). If the proposal is adopted, the labs will find that Publication 14 and Handbook 44 agree and there is no vagueness in the wording of either document or room for misinterpretation. Since field officials may not have access to Publication 14, they need definitive guidelines in their working documents on how to apply the requirement should devices be modified after type evaluation.

In 2004 the Committee interpreted General Code Paragraph G-S.6. Marking Operational Controls, Indications, and Features and Paragraph S.1.1. as requiring weighing devices to be marked or provide an indication stating the zero balance is represented by other than a digital zero indication. This position is supported by the 1993 amendment to Paragraph S.1.1.(c) as well as type evaluation requirements and other Handbook 44 requirements adopted to ensure

customers have sufficient information about displays and recorded transaction information in order to make an informed decision during a direct sale transaction.

The Committee has heard opposition to the proposal from several regional associations, the Weighing Sector, and scale manufacturers. These groups cited the following reasons for taking this position: (1) current Handbook 44 language provides sufficient guidelines, (2) labeling criteria applied during type evaluation offers adequate protection from fraud, (3) the type evaluation laboratory determines that labeling is not necessary if a scale has an automatic means to inhibit a transaction when it is out of balance or returns to a continuous digital indication when in an out-of-balance condition, or (4) several jurisdictions have indicated they are not receiving any complaints because equipment lacks explanatory marking information.

The Committee believes provisions should be in place for all devices to clearly indicate a zero-balance condition either with a digital zero, an annunciator, or using some other accepted means. The Committee is concerned there are no definitive guidelines available for the field official to verify a zero-balance condition on software-based devices modified after type evaluation. The Committee continues to believe the proposal has some merit, but modified the language in response to comments that there is confusion about the language that addresses markings and indications. The Committee made changes to S.1.1.(c) to: (1) specify that markings and indications must be visible to the customer and (2) to clarify one instance where markings and indications are not required.

The Committee heard further opposition to the proposal from the public and private sector members who believe the wording in Paragraph S.1.1.(c) is adequate to prevent fraud. However, one jurisdiction in support of the proposal noted that an indication other than zero would not be acceptable for devices such as a retail motor-fuel dispenser since it found dispensers in the field with no zero indication as a result of software changes made to indications after type evaluation. Consequently, the Committee changed the status of the proposal from a voting item to an information item. The Committee asked that the regional weights and measures associations consider the proposal during their 2006 fall sessions, being mindful that there are installations where the operator is not present to verify a zero-balance condition.

WWMA agreed it should be clear that a scale starts a transaction at zero. WWMA believes the proposed modifications to (c) are sufficient and the note describing when markings are not necessary is redundant. WWMA further asserts that part (2) of the note describing how the device must function is not clearly worded. Consequently, WWMA supports the proposal as a voting item, but without the addition of the proposed note. SWMA supports the WWMA alternate proposal.

CWMA and NEWMA recommend this proposal be withdrawn because the current wording in NIST Handbook 44 is sufficient.

For additional background information, refer to the Committee's 2004, 2005, and 2006 Final Reports.

320-2 S.1.1. 1.(b) Digital Indicating Elements

Source: National Type Evaluation Technical Committee (NTETC) Weighing Sector

Recommendation: Amend Paragraph S.1.1.1.(b) Digital Indicating Elements as follows:

- S.1.1.1. Digital Indicating Elements.
 - (a) A digital zero indication shall represent a balance condition that is within $\pm \frac{1}{2}$ the value of the scale division.
 - (b) A digital indicating device shall either automatically maintain a "center-of-zero" condition to $\pm \frac{1}{4}$ scale division or less, or have an auxiliary or supplemental "center-of-zero" indicator that defines a zero balance condition to $\pm \frac{1}{4}$ of a scale division or less. <u>The auxiliary or supplemental "center-of-zero" indicator may be operable with a zero net weight indication.</u>

[Nonretroactive as of January 1, 1993] (Amended 1992 and 200X) SWMA recommends an alternate proposal as follows:

- S.1.1.1. Digital Indicating Elements.
 - (a) A digital zero indication shall represent a balance condition that is within $\pm \frac{1}{2}$ the value of the scale division.
 - (b) A digital indicating device shall either automatically maintain a "center-of-zero" condition to ±¼ scale division or less, or have an auxiliary or supplemental "center-of-zero" indicator that defines a zero balance condition to ±¼ of a scale division or less. <u>The auxiliary or supplemental "center-of-zero" indicator may be operable with a zero condition in the net weight mode.</u>

[Nonretroactive as of January 1, 1993]

(Amended 1992 and 200X)

Discussion: Scales Code requirements do not include sufficient detailed language that identifies all types of tare, define how tare features must operate, or specify the net and tare values a scale must indicate and record. Current NIST Handbook 44 requirements that address tare include Paragraphs S.2.1.6. Combined Zero-Tare ("0/T") Key, S.2.3. Tare, S.2.3.1. Monorail Scales Equipped with Digital Indications, and T.N.2.1. General (Tolerances). This Weighing Sector proposal is the first of several proposed modifications to Handbook 44 requirements intended to clarify the suitability of tare features that are already widely used in commercial applications.

The Weighing Sector developed criteria used to type evaluate tare features based on General Code Paragraph G-S.2. Facilitation of Fraud and other requirements that apply to indicating and recording elements and recorded representations. NTEP laboratories find that it has become increasingly difficult to solely base its compliance decisions on Paragraph G-S.2. because the general nature of the language results in multiple interpretations. Type evaluation criteria are published in NCWM Publication 14; however, this document is not in wide distribution in the weights and measures community and only a limited number of weights and measures officials, device manufacturers, and device owners and operators are regular participants in Weighing Sector meetings where tare evaluation criteria are developed and discussed. Additionally, it is difficult for parties responsible for the design, use, and test of the tare feature to interpret and apply technical requirements published in Publication 14. This results in differing interpretations of Handbook 44 requirements.

In 2006, the NTETC Weighing Sector formed a Tare Work Group to review existing tare requirements and make recommendations about how tare is to operate on a single range scale, multiple range scale, and multi-interval scale. The work group was also asked to develop, where necessary, recommendations for changes to Publication 14, Handbook 44, and Handbook 130 and to provide guidance to the Weighing Sector on type evaluation requirements.

The work group is currently developing proposals to amend Handbook 44 requirements to: (1) ensure that a tare feature operates in a manner that increases the accuracy of net weight determinations, (2) clearly state what information and values are permitted and required for indicated and recorded representations of net weight and tare weight, and (3) identify the types (e.g., semiautomatic and stored tares) of tare weight values that are determined at the time objects are weighed or tare weight values that are determined prior to the time objects are weighed. The Weighing Sector agreed the work group's proposal to amend Paragraph S.1.1.1.(b) further clarifies that an auxiliary or supplemental "center-of-zero" indication is permitted with a load on the scale provided tare material is zero-balanced off by the tare mechanism and prescribes that the acceptable limits of accuracy are within $\pm \frac{1}{4}$ scale division for the resulting zero net indication. The Weighing Sector recommends the adoption of the proposal as an important step to promoting the development of specific language in Handbook 44 for specifications, test notes, and tolerances for different types of tare (e.g., tare, preset tare, percentage tare, etc.).

SWMA supports the intent of the Weighing Sector's proposal, but agreed that some modifications to the text were needed to clarify that the center-of-zero indicator may be operable when a zero condition exists in the net weight mode. SWMA recommends that its alternate proposal move forward as a voting item to the NCWM S&T Committee's agenda.

320-3 S.1.2.1. Weight Units and T.N.2.1. General

Source: National Type Evaluation Technical Committee (NTETC) Weighing Sector

Recommendation: Add new note to Paragraph S.1.2.1. and amend Paragraph T.N.2.1. as follows:

S.1.2.1. Weight Units. - Except for postal scales, a digital-indicating scale shall indicate weight values using only a single unit of measure. Weight values shall be presented in a decimal format with the value of the scale division expressed as 1, 2, or 5, or a decimal multiple or submultiple of 1, 2, or 5. [Nonretroactive as of January 1, 1989]

Note: The requirements that the value of the scale division be expressed as 1, 2, or 5, or a decimal multiple or submultiples of 1, 2, or 5 does not apply to net weight values that are calculated from gross and tare weight indications where the scale value of the gross weight is different from the scale value of the tare weight(s) on multi-interval or multiple range scales. For example, a scale indicating in 2-kg divisions in the lower range or segment and 5-kg divisions in the higher range or segment may result in net values ending in three (3) or eight (8) or a scale indicating in 20-lb divisions in the lower range and 50-lb divisions in the higher range or segment may result in net values in 30 or 80.

[Nonretroactive as of January 1, 1989] (Added 1987) <u>(Amended 200X)</u>

T.N.2.1. General. - The tolerance values are positive (+) and negative (-) with the weighing device adjusted to zero at no load. When tare is in use, the tolerance values are applied from the tare zero reference (zero net indication); the tolerance values apply to the net weight indication for every possible tare load using certified test loadsonly. (Amended 200X)

SWMA recommends the Committee also consider modifying Paragraph S.2.3. as follows:

S.2.3. Tare. - On any scale (except a monorail scale equipped with digital indications), the value of the tare division shall be equal to the value of the scale division.* The tare mechanism shall operate only in a backward direction (that is, in a direction of underregistration) with respect to the zero-load balance condition of the scale. A device designed to automatically clear any tare value shall also be designed to prevent the automatic clearing of tare until a complete transaction has been indicated.* (Amended 1985)

[Note: On a computing scale, this requires the input of a unit price, the display of the unit price, and a computed positive total price at a readable equilibrium. Other devices require a complete weighing operation, including tare, net, and gross weight determination]* [*Nonretroactive as of January 1, 1983]

This requirement does not apply to multi-interval scales or multiple range scales when the value of tare is determined in a lower range. (Amended 200X)

Discussion: In 2006, the NTETC Weighing Sector formed a Tare Work Group to review existing tare requirements and make recommendations about how tare is to operate on a single range scale, multiple range scale, and multi-interval scale. The work group was also asked to develop, where necessary, recommendations for changes to Publication 14, Handbook 44, and Handbook 130, and to provide guidance to the Weighing Sector on related type evaluation requirements.

This proposal, which was developed by the Tare Work Group and is supported by the Weighing Sector, adds a new note to Paragraph S.1.2.1. The note recognizes display and printing of net weight values in divisions other than the scale division used in the display of gross weight, resulting in a more accurate net weight determination.

The proposal also amends Paragraph T.N.2.1. to clarify that tolerances also apply to net weight indications regardless of the gross load on the scale. The Tare Work Group reviewed OIML R 76 "Nonautomatic Weighing Instruments" for

corresponding requirements and to determine if there were areas where Handbook 44 could be aligned with international recommendations. Based on that review, the work group agreed that Handbook 44 Paragraph T.N.2.1. should be modified to state that tolerances also apply to net load indications.

The Tare Work Group discussed problems associated with determining the appropriate direction to round tare on multiinterval scales and multiple range scales whenever gross and tare weights fall in different weighing segments on a multiinterval scale or in different weighing ranges on multiple range scales. In these cases, the scale division size for the gross and tare weights differ; however, the net weight must be in mathematical agreement with the gross and tare weights that are indicated and recorded by the device (i.e., gross weight - tare weight = net weight).

The problem arises when the tare weight is rounded up to the next larger scale division where the net weight falls in the higher segment or range. For example, a 0.004 lb tare weight in a weighing range or segment with 0.002 lb intervals in the lower weighing range or segment may round to zero when the net weight falls in the upper weighing range with 0.01 lb intervals:

10.05 lb Gross Weight <u>- 0.004 lb Tare Weight</u> = 10.046 lb the Mathematically Correct Net Weight;

However, due to rounding the device indicates 10.05 lb Net Weight

This results in a transaction where a commodity is bought or sold on the basis of gross weight or when an insufficient amount of tare weight is taken and results in a misrepresentation of net weight for the transaction. Essentially, the rounding of tare that falls in a smaller division in either direction (e.g., a 0.015 lb tare weight rounded down to zero or to 0.01 lb or up to 0.02 lb) provides a less accurate net weight.

The Tare Work Group developed a corresponding proposal for the Automatic Weighing Systems Code to clarify the appropriate scale division values and the application of tolerances to tare weights for those devices (see S&T Item 324-1).

SWMA supports the recommendation; however, SWMA also agreed that an additional note should be added to Paragraph S.2.3. Tare, as shown in the recommendation above to eliminate any conflict with proposed changes to Paragraph S.1.2.1. The new note proposed for Paragraph S.2.3. clarifies that the requirement does not apply to multi-interval scales or multiple range scales when tare is determined in the lower range of those scales.

320-4 S.1.4.6. Height and Definition of Minimum Reading Distance, UR.2.10. Primary Indicating Elements Provided by the User, UR.2.11. Minimum Reading Distance, and Definitions of Minimum Reading Distance and Primary Indications

Source: Carryover Item 320-2. (This item originated from the National Type Evaluation Technical Committee (NTETC) Weighing Sector and first appeared on the Committee's 2006 agenda.)

Recommendation: The Committee considered the Weighing Sector's first attempt at a proposal that adds new Paragraphs S.1.4.6., UR.2.10., and UR.2.11. to the Scales Code.

S.1.4. Indicators.

S.1.4.6. Height. - All primary indications shall be indicated clearly and simultaneously.

(a) <u>On digital devices that display primary indications during direct sales to the customer, the numerical</u> <u>figures displayed to the customer shall be at least 9.5 mm (0.4 in) high.</u>

(b) <u>The units of mass and other descriptive markings or indications, such as lb, kg, gross, tare, net, etc.,</u> <u>shall be clearly and easily read and shall be at least 2 mm (0.08 in) high.</u> [Nonretroactive as of January 1, 200X] (Added 200X)

UR.2. Installation Requirements

<u>UR.2.10. Primary Indicating Elements Provided by the User. – Primary indicating elements that are</u> not the same as the primary indicating elements provided by the original equipment manufacturer (e.g., video display monitors) shall comply with the following:

- (a) <u>On digital devices that display primary indications during direct sales to the customer, the</u> <u>numerical figures displayed to the customer shall be at least 9.5 mm (0.4 in) high.</u>
- (b) <u>The units of mass and other descriptive information, such as gross, tare, net, etc., shall be displayed or marked on the device and shall be at least 2 mm (0.08 in) high.</u> (Added 200X)

UR.2.11. Minimum Reading Distance – On digital devices that display primary indications, the height of the numbers expressed in millimeters should be not less than 3 times the minimum reading distance expressed in meters, without being less than 2 mm (0.08 in). (Example: If the height of the primary indications is 10 mm, then the minimum reading distance should not be greater than 30 m). (Added 200X)

Add new definitions of "minimum reading distance" and "primary indications" to Appendix D as follows:

minimum reading distance. The shortest distance that an observer is freely able to approach the indicating device to take a reading under normal conditions of use. This approach is considered to be free for the observer if there is a clear space of at least 0.8 m in front of the indicating device. However, if the minimum reading distance "S" in Figure X is less than 0.8 m, then the minimum reading distance is "L" in Figure X. [2.20] (Added 200X)



Figure X

primary indications. Weight or other units of measurement values that are displayed by a primary indicating element. The primary indications are used as the determining factor in arriving at the sale representation when the device is used commercially. (Examples of primary indications include the measurement value, unit price or count, and total price on instruments capable of price computing.

<u>Primary indications do not include indications from auxiliary indicating devices such as totalizing</u> registers and pre-determined stop mechanisms.) [1.10], [2.20] (Added 200X)

This proposal was developed to address a growing problem with the readability of weight indications and the values that define transaction information. Field and laboratory officials indicate both are becoming increasingly smaller, as demonstrated in the following example of a weight display where the actual size of the weight values are 23 mm in height, but the unit of measurement (g) is 4 mm in height.



Field and laboratory officials need more specific requirements to consistently determine if indications are suitable for the environment in which the device is used. Currently only the Taximeters, Grain Moisture Meters, and Near-Infrared Grain Analyzers Codes include requirements that specify the minimum height of figures, words, and symbols. The size requirements for all three device technologies were developed primarily because of concerns about the visibility of indications from the customer's position. NIST Handbook 44 and NCWM Publication 14 include no uniform size requirements or specific guidelines on how to evaluate display information for clarity and readability for equipment other than these three device types.

The Weighing Sector developed and voted on a proposal which provided guidelines for determining whether or not indications are appropriate in a particular installation. The Weighing Sector's proposal was aligned with OIML R 76 requirements for visibility of indications to the customer in direct sale applications, minimum height of lettering for identification information, and the minimum height of numbers for analog indicating devices.

In 1999 a similar proposal to amend General Code Paragraph G-S.5.2.3. Size and Character to include minimum height requirements was considered but later withdrawn. GPMA expressed strong opposition to the 1999 proposal because many of the measuring devices were equipped with quantity displays that would not meet the proposed 9.5 mm size requirement. The Committee agreed at the time that officials need uniform guidelines that are not ambiguous as to which transaction information must meet size requirements. However, the Committee also believed that any future proposals should address a specific device technology since it is difficult to address all device configurations and the environmental conditions that exist at each installation site.

The Weighing Sector balloted its members with expectations of only minor changes to the proposal. The Weighing Sector received feedback that the definition and illustration of a minimum reading distance were confusing. SMA also opposed the proposal because it believed a reading distance requirement is unenforceable.

The Committee also received comments from a consultant that the proposal is unnecessary. General Code Paragraph G.S.5.1. Indicating and Recording Elements can be applied in type approval and thus eliminates the need to borrow any corresponding language from R 76 or add any language to Handbook 44. Comments received suggest that the United States should stick to performance-based requirements, noting that the proposal does not adhere to that principal.

The Committee agreed that although the clarity and readability of indications is a growing issue, the current proposal has only limited support from the public and private sectors. The Committee recognized the proposal requires a significant

amount of work before the language is clear, technically correct, and deemed applicable to the different types of installations and technologies in current use. The Committee has concerns about whether or not the proposed 2 mm height requirements for units of measurement and other markings are adequate. The Committee also questioned the clarity of the proposed user requirements for the minimum reading distance. Therefore, the Committee asked the Weighing Sector to continue its work to develop the proposal and possibly consider two separate proposals–a design specification and a user requirement–since the specification for the primary indication height is nearer to completion. The Committee agreed the proposal should remain an information item to allow the Weighing Sector sufficient time to fully develop the language.

At its September 2006 meeting, WWMA agreed that a minimum height requirement for values should be specified in design requirements and in user requirements that apply throughout the life of the device, especially when any modifications are made to the original equipment. WWMA believes the proposed new user requirement and definition pertaining to "minimum reading distance" are not clear and, therefore, are not necessary because they are already addressed elsewhere in Handbook 44. The requirements for ensuring values are adequate in size in all possible installation sites are also addressed elsewhere in General Code Paragraphs G-UR.2.2. Installation of Indicating or Recording Element and G-UR.3.3. Position of Equipment. Consequently, WWMA modified the proposal by removing proposed new Paragraph UR.2.11. and the definition of minimum reading distance and kept the Weighing Sector's proposed requirements for the minimum height requirements and the definition of primary indications recommending the modified proposal move forward as a voting item to the NCWM S&T Committee agenda.

CWMA believes that the proposed new user requirement and definition pertaining to "minimum reading distance" are already addressed in the user requirements of the General Code (G-UR.2. Installation Requirements). The requirement for ensuring that values are adequate in size are also addressed in the same General Code section. Therefore, CWMA agreed to the proposal of removing new Paragraphs UR.2.10. and UR.2.11. from the proposal and recommended the amended language move forward as a voting item.

During its 2006 meeting, the Weighing Sector reviewed taximeter requirements for the minimum height of figures, words, and symbols for comparison with the proposed Scales Code requirements. The public members concluded the minimum height requirements for figures, words, etc., (3.5 mm) were 35 % of those for fare indications (10 mm). The size requirements in the current Scale's Code proposal represent a relationship of 21 %. The Weighing Sector did not reach a consensus on the most appropriate relationship for this displayed information. The Weighing Sector agreed to consider an alternate proposal that specifies the proposed size requirements for units of mass and other descriptive markings or indications as 21 % of the height of primary indications rather an exact length value. The Weighing Sector was not able to discuss the user requirements or definitions because of time constraints.

CWMA and NEWMA agreed that proposed new Paragraphs UR.2.10. and UR.2.11. and the proposed new definition of "minimum reading distance" are not needed and are addressed elsewhere in Handbook 44; they agreed the proposed new Paragraph S.1.4.6. alone is sufficient. However, NEWMA questions whether or not the 2 mm height minimum in Subparagraph (b) is unrealistically small. One NEWMA member suggested that the minimum be some fraction of the height of the primary indication but no smaller than 4 mm or 5 mm. NEWMA has no specific recommendations but supports this item as an information item until new language regarding the minimum height can be agreed upon.

SWMA supports the Weighing Sector's recommendation in principle, but it is not certain that 21 % is the correct relationship.

320-5 S.2.1.7. Tare Rounding on a Multiple Range Scale

Source: Southern Weights and Measures Association (SWMA)

Recommendation: Add a new Paragraph S.2.1.7. to the Scales Code as follows:

S.2.1.7. Tare Rounding on a Multiple Range Scale. - A multiple range scale with tare capability must indicate and record values that satisfy the equation:

<u>net = gross - tare</u>

and round the tare value up to the larger division size when entering the larger division. (Added 200X)

Discussion: A recent reversal of a ten-year-old NTEP policy now permits the operation of tare on multiple range scales to round down, thus overstating the quantity. SWMA believes this Weighing Sector decision to round tare down should be addressed by all members of NCWM. The proposal was developed to eliminate any conflict in the operation of the tare function on multiple range scales in the determination of a net weight.

Currently, there may be a conflict between NIST Handbook 44 requirements and NCWM Publication 14 policy for rounding tare values on multiple range scales. NIST Handbook 44 General Code Paragraph G-S.5.2.2.(c) Digital Indication and Representation requires that digital values round off to the nearest minimum unit that can be indicated or recorded. Also in question is a possible conflict with NIST Handbook 130 guidelines which specify that in no case shall rounded values result in overstating the net quantity. NTEP is also revising its tare criteria through its Tare Work Group to ensure there is no further conflict with NIST Handbook 44.

At their fall 2006 meetings, the regional weights and measures associations considered this SWMA proposal as part of ongoing work by the Weighing Sector Tare Work Group when SWMA intended it to be a separate proposal that addresses only tare rounding policies and procedures for multiple range scales. WWMA believes the issue of tare capability is complex and the proposal also needs to address the suitability of the tare division size; prohibition of division sizes other than 1, 2, and 5; the scale application (buying or selling); and other issues that relate to tare. For these reasons, WWMA believes the proposal should be thoroughly developed in the NTETC Weighing Sector prior to forwarding it to the NCWM S&T Committee for action. Consequently, WWMA recommended withdrawing the SWMA proposal. CWMA and NEWMA opposed this proposal as presented and agreed to await further input from the Weighing Sector Tare Work Group.

During its 2006 meeting, SWMA considered its proposal, designated in 2006 as a developing item, an urgent matter that no longer needs input because the proposal is ready for national consideration. SWMA reports that a majority of the Weighing Sector believes the criteria noted in Publication 14 for use in type evaluation of devices with the tare feature do not meet Handbook 44 requirements. SWMA agreed that the decision to permit rounding keyboard tare down on multiple range scales is facilitation of fraud. The customer and the operator observe that a tare weight was entered in the lower range of a multiple range scale. When the gross weight is in a higher weighing range, the customer is not provided with "clear, definite, accurate" indications of the possible reduction of tare.

SWMA recognizes that OIML permits rounding tare down, but believes that customers are not able to make adjustments in unit prices to compensate for losses when tare is rounded down, whereas businesses can adjust the price to compensate for overhead expenses and losses that occur if tare is rounded up.

SWMA provided discussion and examples to support its position as follows:

History

The operation of "tare" on a weighing device was first addressed in detail in 1971. In the 1971 Committee's Final Report (see NIST Special Publication (SP) 358, Page 170), the rationale for adding Paragraph S.2.3. Tare Mechanism to Handbook 44 was to ensure net weight is represented for commodities sold directly over computing scales and to recognize new developments in device technology. Tare capability and its operation were again addressed in S&T Item 301-3 Tare of the 1980 Committee's Final Report (see NIST SP 599 Page 216). The report noted "a key factor is the requirements in Paragraphs G-S.2. Facilitation of Fraud and G-S.5.1. Indicating and Recording Elements, General specify the indications to be clear, definite, accurate, and easily read by all parties involved in the weighing operation."

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SWMA notes that some believe that General Code Paragraphs G-S.5.2.2. Digital Indication and Representation is intended to address the rounding of tare to the nearest minimum unit when it was amended in 1973. However, the 1980 Committee's Final Report notes only General Code Paragraphs G-S.2. and G-S.5.1. Furthermore, there is no evidence in any of the Final Reports that the Committee agreed that the practice of rounding tare up, which has been NTEP policy, is in conflict with Handbook 44.

In 2006, the Weighing Sector technical advisor contacted two members of the 1980 NCWM S&T Committee and determined that the focus of tare discussions were on single range scales, rather than multi-interval scales and multiple range scales, and followed rounding rules listed in Handbook 44. Consequently, specific interpretations or proposals were needed to determine how requirements apply to multi-interval and multiple range devices.

SWMA provided an example to make its point that if no tare is taken, the store has sold less than the quantity represented. Consider an example where a store's deli is selling cheese for \$7/lb and the weight of the roll of wrapping paper used in the deli is 40 lb. Sections of the wrap used in individual transactions are not heavy enough to register on the scale during a single transaction; however, if no tare is taken, the store collects an extra \$280 (40 lb x \$7/lb). The store controls the unit price for the commodity and selects the tare material and the resolution for the scale that it uses. SWMA heard the argument that the store is losing money if it is forced to round tare up. SWMA's response to that argument is to remind everyone that businesses view such losses as part of overhead expenses, which most typically compensate for by making adjustments to their unit prices. The customer does not have the ability to adjust or bargain on the unit price.

SWMA notes that the loss to the customer when tare is rounded down is larger when scale error is on the plus side, even though the scale is within accuracy tolerances. In this case, SWMA does not believe scale error is a justification for selling less than the quantity represented. For example, given a 30 lb x 0.01 lb scale:

The scale has an internal error of plus (+) 0.012 lb, which is displayed as 0.01 lb, which is within maintenance tolerance. However,

If the tare material used weighs 0.004 lb, there is an increased loss to the customer from 0.01 lb to 0.02 lb since (0.012 lb + 0.004 lb = 0.016 lb would be displayed as 0.02 lb on the scale)

OIML

Historically, weights and measures officials have been against rounding tare down. But what should occur if you are rounding to the nearest division? Is zero considered a division? SWMA acknowledges that zero is a division. The OIML Secretariat of TC9/SC1 for Nonautomatic Weighing Instruments R 76 noted in his response to the United States inquiry on that same question was "of course, rounding the tare value to zero is possible if it is less than 0.5 e_i (interval of the weighing segment) of the actual range i (interval)." Multiple range scales meet R 76 rounding criteria when they round to zero. However, R 76 Section 4.13.3.2 Semi-automatic Tare Device specifies that an instrument may be fitted with semi-automatic tare devices if the action of the tare devices does not permit a reduction of the value of the tare.

SWMA notes that there is not consensus within the international weighing and measuring community to allow tare to round down. A direct quote of the Netherlands position on the latest draft of R 76 (in regard to 4.6.12.5 Multi-interval instrument with a preset tare device) was "In principle the conclusion that with e = 2 g the value of 3 g can be rounded to 2 g or 4 g is correct. However could we not agree in this Recommendation that 1 g or 3 g always will be rounded up (because in the case where e = 1 g, a tare value of 0.5 g is always rounded up)."

Application of Tare Rounding Criteria

On multi-interval scales tare is restricted to the smallest division, thus eliminating the possibility of rounding tare below its actual weight. For example, criteria for rounding tare on a multiple range scale results in a tare value of 12 lb in Range 1, but when the net weight causes the scale to switch to Range 2, the tare value would become 10 lb.

The Tare Work Group considered the problems of tare rounding can be demonstrated in another example that was considered by the Tare Work Group which illustrates some of the losses that can occur to parties involved in a transaction that is conducted on a multiple range scale where different rules for rounding are applied:

Given a multiple range scale where,

	No Tare Rounding	Tare Rounded Down	Tare Rounded Up
	in the 2 nd Range	to Nearest Division	to Nearest Division
		in the 2 nd Range	in the 2 nd Range
Gross	266.2 lb (falls in 2 nd range)	266.2 lb (falls in 2 nd range)	266.2 lb (falls in 2 nd range)
Tare	53.44 lb (falls in 1 st range)	53.4 lb (falls in 2 nd range)*	53.5 lb (falls in 2 nd range)
Net	212.76 lb (actual weight)	212.8 lb	212.7 lb
Loss	0.0 lb	0.04 lb (consumer 's loss)	0.06 lb (store's loss)

Capacity of the first range = 60 lb; scale division of the first range = 0.01 lb
Capacity of the second range = 300 lb ; scale division of the second range = 0.1 lb

A multiple range scale is viewed as two separate scales even though it has two or more weighing ranges with different maximum capacities and different scale intervals, each extending from zero to its maximum capacity all on the same load receptor. A multiple range scale is basically multiple scales in one housing. Current practices do not allow rounding of tare to zero with completely separate scales when the results of weighments on both scales are used to determine the gross, net, and tare weight. Indicators totalizing multiple weighing elements are required to calculate the total weight based on the smallest scale division to eliminate problems with inaccurate net weights.

Conclusion

SWMA agreed that if the real issue is protecting both the retailer and the consumer perhaps what should be looked at is: (1) the suitability of the scale division based on unit price and/or application, (2) limiting the multiple of the scale division difference between the weighing ranges, (3) reducing the allowable tolerance, and (4) limiting the initial determination of the tare, gross, and net to the same weighing range.

SWMA believes all multiple range scales currently evaluated by NTEP should not round tare down when changing to a higher scale division. For over ten years, the NTEP checklist test criteria for multiple range and multi-interval devices in NCWM Publication 14 has always been that tare will round up to the nearest scale division.

320-6 N.1.3.1. Bench or Counter Scales, N.1.3.8. All Other Scales Except Crane Scales, Hanging Scales, Hopper Scales, Wheel–Load Weighers, and Portable Axle-Load Weighers, and Appendix D; Definitions of Bench Scale and Counter Scale

Source: Carryover Item 320-3. (This item originated from the National Type Evaluation Technical Committee (NTETC) Weighing Sector and first appeared on the Committee's 2005 agenda.)

Recommendation: Delete Paragraph N.1.3.1. and renumber subsequent paragraphs.

N.1.3. Shift Test.

N.1.3.1. Bench or Counter Scales. – A shift test shall be conducted with a half-capacity test load centered successively at four points equidistant between the center and the front, left, back, and right edges of the load-receiving element.

Renumber and amend Paragraph N.1.3.8. as follows:

N.1.3.87. All Other Scales Except Crane Scales, Hanging Scales, Hopper Scales, Wheel-Load Weighers, and Portable Axle-Load Weighers. A shift test shall be conducted using the following prescribed test loads and test patterns. A single field standard weight used as the prescribed test load shall be applied centrally in the prescribed test pattern. When multiple field standard weights are used as the prescribed test load, the load shall be applied in a consistent pattern in the shift test positions throughout the test and applied in a manner that does not concentrate the load in a test pattern that is less than when that same load is a single field standard weight on the load-receiving element.

- (a) For scales with a nominal capacity greater than 500 kg (1000 lb), a shift test may be conducted by either using a one-third nominal capacity test load (defined as test weights in amounts of at least 30 % of scale capacity, but not to exceed 35 % of scale capacity) centered as nearly as possible at the center of each quadrant of the load-receiving element using the prescribed test pattern as shown in Figure 1 below, or by using a one-quarter nominal capacity test load centered as nearly as possible, successively, over each corner of the load-receiving element using the prescribed test pattern as shown in Figure 2 below.
- (b) For scales with a nominal capacity of 500 kg (1000 lb) or less, a shift test shall be conducted using a one-third nominal capacity test load (defined as test weights in amounts of at least 30 % of scale capacity, but not to exceed 35 % of scale capacity) centered as nearly as possible at the center of each quadrant of the load-receiving element using the prescribed test pattern as shown in Figure 1 below.
- (c) For livestock scales, thea shift test load shall be conducted using either a test load of one half nominal capacity provided that the test load does not exceed one-half the rated section capacity or one-half the rated concentrated load capacity, whichever is applicable. A shift test shall be conducted using either: The test load shall be centered as nearly as possible at the center of each quadrant of the load-receiving element using the prescribed test pattern as shown in Figure 1 below, or one-quarter the rated section capacity or one-quarter the rated concentrated load capacity load centered as nearly as possible, successively over each corner of the load-receiving element using the prescribed test pattern as shown in Figure 2 below.
- (a) A one-quarter nominal capacity test load centered as nearly as possible, successively over eachmain load support as shown in the diagram below; or
- (b) A one-half nominal capacity test load centered as nearly as possible, successively at the center of each quarter of the load-receiving element as shown in the diagram below.
 (Amended 1987, and 2003, and 200X)

Delete the diagrams that correspond to existing Paragraphs N.1.3.8.(a) and (b) and add new Figures 1 and 2 to correspond with proposed revisions to N.1.3.8. as follows:



Figure 2	

Position 1		Position 2
Position 4		Position 3

(Added 2003) (Amended 200X)

Delete Appendix D definitions for "bench scale" and "counter scale" as follows:

bench scale. See "counter scale."[2.20]

counter scale. One that, by reason of its size, arrangement of parts, and moderate nominal capacity, is adapted for use on a counter or bench. Sometimes called "bench scale."[2.20]
Discussion: The proposal is intended to clarify the appropriate shift test pattern and test loads for scales currently designated as bench/counter scales and other platform-type scales. Currently, bench and counter scale shift tests are conducted with a one-half capacity test load centered successively at four points equidistant between the center and the front, left, back, and right edges of the load-receiving element. Other platform scale shift tests are conducted with a one-half capacity test load centered, successively at the center of each quadrant. The proposal eliminates references to bench and counter scales and instead prescribes that the shift test load and test pattern used for those and all scales other than livestock be based on the scale's nominal capacity. For livestock scales the proposal further clarifies, but does not change, the existing requirements for shift tests.

In 2005, the proposal was kept on the agenda as an information item in response to comments indicating that data should be collected on shift tests to verify that the proposed test loads and positions are equivalent to existing test patterns and allow the data to be reviewed by the Weighing Sector, NIST, and the NTEP laboratories.

During the 2006 NCWM Interim Meeting, the Committee received data for shift tests conducted using current shift test requirements and shift tests conducted using the proposed test requirements on the same scales. The NIST technical advisor to the Weighing Sector provided a summary of data gathered by multiple jurisdictions on 207 scales demonstrating that the proposed procedures (i.e., shift test loading pattern and the amount of test weights) based on scale capacity are adequate for use to determine that an instrument with load points of any design configuration can meet performance tolerances during off-center loading. There was no demonstrated difference in scale performance based on the location of the scale, thus the terms "bench" and "counter" should be eliminated. In response to that data, comments were received from the public and private sectors in support of the proposal. SMA also supported the proposal.

NIST WMD supported the intent of the proposal with two changes to clarify what is meant by one-third nominal capacity and the proper placement of test weights to avoid overloading load bearing points. WMD recommended language that specifies the test load at one-third capacity shall not be less than 30 % or greater than 35 % of scale capacity. WMD also noted inconsistencies in the manner in which weights are distributed within the test pattern during shift tests; therefore, it also recommended including language in renumbered Paragraph N.1.3.7. that specifies "when multiple test weights are used, the load shall not be concentrated in a test pattern smaller than that which a single weight would occupy."

Consequently, the Committee modified the entire proposal, Parts (a) through (c), to include language that is technically correct and consistent in its description of how to conduct a shift test on all types of scales. The Committee modified the language to: (1) clarify what defines "acceptable" weight values for a test load that is one-third of the scale's nominal capacity, (2) ensure uniform procedures are followed when applying test weights on the load-receiving element, and (3) eliminate instances where test weights are concentrated in a pattern that overload the load bearing points as illustrated in the example below.

Consider an example of a livestock scale with a section capacity of 1000 lb: a shift test is performed as shown in Figure 1 using a test load of 500 lb. While 100 lb test weights are not commonly used or available, they are used in this example to illustrate the concept of uniformity when applying a test load in a specified pattern on the load-receiving element.



Figure 1: Application of Test Weights

The Committee agreed there was sufficient data to present the proposal for a vote at the July 2006 NCWM Annual Meeting since it received no data indicating there were problems with the proposed shift test procedures.

At the 2006 NCWM Annual Meeting, the Committee addressed concerns about the lack of a guideline for a minimum test load and the extensive nature of modifications to livestock scale requirements. The Committee explained that it had only reorganized the livestock scale requirements. The Committee further modified proposed new Paragraph (c) to specify a minimum shift test load of one-half nominal capacity to ensure sufficient test weights are used during the test. Industry acknowledged that although the shift test loads for other scale types was reduced from one-half to one-third, the

rated nominal capacity specified in the newly proposed test load patterns for the lighter test load could sometimes create a more stringent test of the scale's performance.

The Committee heard concerns that substantive changes were made to livestock scale requirements and it should revisit earlier proposed language. The vote on the item did not yield a sufficient number of positive or negative votes for the item to be accepted or defeated and, therefore, the proposal was returned to the Committee for further action. The Committee asks jurisdictions to carefully review the consistency that exists between the proposed language and current Handbook 44 requirements for livestock scales and to provide input on alternate language that might be more appropriate and/or further clarify the shift tests and test loads for these devices.

The WWMA S&T Committee had the opportunity to review an alternate proposal that was to be presented to the NTETC Weighing Sector in September 2006. The WWMA S&T Committee liked the direction of the Weighing Sector alternate proposal, which clarifies shift tests procedures in livestock scale applications, addresses shift test patterns for circular platforms, and eliminates some of the redundant text. Since the Weighing Sector members would not have the opportunity to review and agree on the alternate language until after the WWMA conference, WWMA recommended the proposal as an information item.

CWMA supports the proposal, but recommends an alternate proposal to modify and renumber Paragraph N.1.3.8.(b) to read as follows:

N.1.3.87. All Other Scales Except Crane Scales, Hanging Scales, Hopper Scales, Wheel-Load Weighers, and Portable Axle-Load Weighers.

(b) For scales with a nominal capacity of 500 kg (1000 lb) or less, a shift test shall be conducted using up to 50 % nominal capacity test load (defined as test weights in amounts of at least 30 % of scale capacity, but not to exceed 50 % of scale capacity) centered as nearly as possible at the center of each quadrant of the load-receiving element using the prescribed test pattern as shown in Figure 1 below.

CWMA developed this alternate recommendation for modifying and renumbering Paragraph N.1.3.8.(b) that is intended to allow jurisdictions more flexibility in using their existing weights.

Based on the comments received during the 2006 NCWM Annual Meeting, the NIST technical advisor to the Weighing Sector amended the proposal as summarized below to:

- (1) Make it clear that no significant changes are being made to two-section livestock scales;
- (2) Simplify the language for the shift test on "Other" scales;
- (3) Group the livestock scale shift test requirements together;
- (4) Change the order of the "test notes" so that the more common type of scales are listed first; and
- (5) Include minor editorial suggestions on existing language.

The Weighing Sector considered this alternate proposal along with a comment solicited from the PTB and one industry consultant indicating there is a higher risk of overloading one of the (multiple) supports by using a one-half capacity load in an eccentric loading test pattern than by using a one-third capacity load. This appears to stem from the difference in test method between Handbook 44 and OIML R 76. In other words, Handbook 44 more or less assumes a rectangular platform and places the load at a point on a line halfway from the center to the edge as illustrated in Figure 1.



Figure 1: NIST Handbook 44 Shift Test at One-Half Capacity

OIML R 76 recognizes that platforms exist in other shapes (e.g., square, triangular, or circular platforms) as illustrated in Figure 2.



Figure 2: OIML R 76 - Quadrants shown for platforms of devices with four or fewer points of support

Thus, since OIML R 76 depends more on placing the eccentric load in a prescribed section of the total area of the platform rather than on a specific line, they more or less trust the load will be placed at the center of the quadrant according to the figures illustrated in OIML R 76 for scales with four or fewer supports. The end result of both methods, especially for rectangular platforms, is more or less the same.

During the subsequent discussions, several Weighing Sector members stated that the proposed language was unnecessary since there was no technical justification to change the current language in Handbook 44. Additionally, the proposed language would prohibit weights and measures officials from using one-half capacity even though the scale could be weighing loads up to one-half scale capacity that are not in the center of the platform. In contrast, the NIST technical advisor stated that there was no technical reason to use procedures different than those in R 76. (Note: Manufacturers have stated in past discussions that they have to adjust the scales differently for scales intended for North America and scales intended for countries that adopt OIML recommendations.)

Another industry consultant cited text from the 1915 edition of the precursor to Handbook 44 (see Section 10 for Counter Balances and Scales page 19), noting that the shift test loads and positions have not changed in 91 years.

Measurement Canada reported that the proposal to amend Handbook 44 would be in conflict with their current requirements, however, in the past they have indicated a commitment to align their requirements with OIML R 76.

One scale manufacturer reminded the Sector that the test load positions were also changed in the proposal and that the proposed change to one-third scale capacity puts a different torque on the load cell that is roughly equivalent to current forces when using current Handbook 44 test loads and positions.

Based on a vote of 11 in favor and 8 against withdrawing the proposal to amend current Handbook 44 shift test procedures and shift test loads, the Weighing Sector agreed to withdraw their support for the proposal and recommends that the proposal be withdrawn from the Committee's agenda.

NEWMA supports the proposal.

SWMA recommends withdrawing this proposal from the S&T Agenda, but provided no rationale for this position.

For more background information, refer to the Committee's 2005 and 2006 Final Reports.

320-7 N.1.3.6.1. Dynamic Monorail Weighing Systems

Source: Central Weights and Measures Association (CWMA)

Recommendation: Modify Paragraph N.1.3.6.1. as follows:

N.1.3.6.1. Dynamic Monorail Weighing Systems. - Dynamic tests with livestock carcasses should be conducted <u>during normal plant production</u> 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 test loads may be included in the test run for use in the event that one or two 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 seale 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 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 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 weighment as quickly as possible before or following the dynamic weighment to avoid loss due to shrink. If multiple dynamic tests are conducted using the same carcasses, static weights 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.

(**Note:** For a dynamic monorail test, the reference scale shall comply with the principles in the Fundamental Considerations Paragraph 3.2. Tolerances for Standards.) (Added 1996) (Amended 1999 **and 200X**)

SWMA recommends an alternate proposal that further modifies Paragraph N.1.3.6.1. to specify test conditions for the scale selected to weigh the carcasses as follows:

N.1.3.6.1. Dynamic Monorail Weighing Systems. - Dynamic tests with livestock carcasses should be conducted <u>during normal plant production</u> 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 test loads may be included in the test run for use in the event that one or two 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 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 <u>static</u> weighing <u>of</u> the carcasses shall first be tested statically with <u>certified</u> test weights <u>that have been properly protected from the</u> <u>harsh environment of the packing plant to ensure they maintain accuracy</u>.)

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 weighment as quickly as possible before or following the dynamic weighment to avoid loss due to shrink. If multiple dynamic tests are conducted using the same carcasses, static weights 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.

(**Note:** For a dynamic monorail test, the reference scale shall comply with the principles in the Fundamental Considerations Paragraph 3.2. Tolerances for Standards.) (Added 1996) (Amended 1999 **and 200X**)

Discussion: CWMA supports this item and recommends that it move forward for national consideration. CWMA heard testimony from the USDA Packers and Stockyards Administration indicating the proposal clarifies that the device should be tested while in production and the extra two carcasses referenced in the current language are only for replacement purposes in cases where carcass weight loss occurs as a result of influences other than from the device being tested. The extra carcasses were not intended to replace erroneous or outlying device readings.

SWMA supports the proposal, but recommends further modifications to Paragraph N.1.3.6.1. to specify the test conditions for the static test of the reference scale.

320-8 Table 4. Minimum Test Weights and Test Loads

Source: Carryover Item 320-4. (This item originated from the Northeastern Weights and Measures Association (NEWMA) and first appeared on the Committee's 2006 agenda.)

Recommendation: Modify Table 4. Minimum Test Weights and Test Loads as follows:

Table 4. Minimum Test Weights and Test Loads ¹					
Device capacity	Minimums (in terms of device ca				
	Test weights (greater of)	Test loads ²	(where practicable)		
0 to 150 kg (0 to 300 lb)	100 %				
151 to 1 500 kg (301 to 3 000 lb)	25 % or 150 kg (300 lb)	75 %			
1 501 to 20 000 kg (3 001 to 40 000 lb)	12.5 % or 500 kg (1 000 lb)	50 %	Test weights to dial face capacity, 1 000 d, or test load to used capacity, if		
20 001 kg+ <u>to</u> <u>250 000 kg</u> (40 001 lb+ <u>to 500 000 lb</u>)	12.5 % or 5 000 kg (10 000 lb)	25 % ³	greater than minimums specified During initial verification a scale		
<u>250 001 kg+</u> (500 001 lb+)	12.5 % or 30 000 kg (62 500 lb)	<u>25 %</u> ³	should be tested to capacity		

¹ If the amount of test weight in Table 4 combined with the load on the scale would result in an unsafe condition, then the appropriate load will be determined by the official with statutory authority.

 2 The term "test load" means the sum of the combination of field standard test weights and any other applied load used in the conduct of a test using substitution test methods. Not more than three substitutions shall be used during substitution testing, after which the tolerances for strain load tests shall be applied to each set of test loads

³ The scale shall be tested from zero to at least 12.5 % of scale capacity using known test weights, and then to at least 25 % of scale capacity using either a substitution or strain load test that utilizes known test weights of at least 12.5 % of scale capacity. Whenever practical, a strain load test should be conducted to the used capacity of the scale. When a strain load test is conducted, the tolerances apply only to the test weights or substitution test loads. (Amended 1988, 1989, 1994, **and** 2003)

[Note: GIPSA requires devices subject to their inspection to be tested to at least "used capacity," which is calculated based on the platform area of the scale and a weight factor assigned to the species of animal weighed on the scale. "Used capacity" is calculated using the formula:

Used Scale Capacity = Scale Platform Area x Species Weight Factor

Where species weight factor = $540 \text{ kg/m}^2 (110 \text{ lb/ft}^2)$ for cattle, $340 \text{ kg/m}^2 (70 \text{ lb/ft}^2)$ for calves and hogs, and $240 \text{ kg/m}^2 (50 \text{ lb/ ft}^2)$ for sheep and lambs]

(Amended 200X)

Discussion: Field officials are faced with determining the minimum test load necessary to verify the performance of scales with nominal capacities that exceed 1 000 000 lb. Since January 2006, the Committee has considered several proposed modifications to Table 4., which included listing the minimum and maximum test weights and test loads for devices with capacities that exceed 500 001 lb. However, this action has not resulted in any new guidelines beyond the existing minimum test load requirements in Table 4.

The Committee further acknowledged that officials might have difficulty placing the recommended minimum 25 % test load on some load-receiving elements such as railway track scales with two small platforms with a dead space between them because this configuration limits the size of each platform. Consequently, the Committee agreed that until the submitter develops alternate language and data to justify specific minimum load requirements that warrant a change to existing Handbook 44 requirements, the proposal should remain an information item.

WWMA discussed the proposal and heard one comment that recommended the proposal specify only 62 500 lb of minimum test weights in the proposed new device capacity range that exceeds 500 001 lb. WWMA believes that the carryover proposal does not change the requirements in Table 4., even though the proposed text specifies the amount of

test weights for scale capacities that exceed 500 000 lb. WWMA also believes that data may be needed to demonstrate what is an adequate amount of test weight for scales with capacities that exceed 500 000 lb. Consequently, WWMA recommends that the proposal should be withdrawn.

CWMA recommends that this proposal be withdrawn.

NEWMA recommends that NIST Handbook 44 provide flexible guidelines for determining the minimum acceptable test load when testing high capacity scales. At its October 2006 meeting, NEWMA developed an alternate proposal which modifies Table 4. to address devices with a capacity up to 500 000 lb and to allow some flexibility by eliminating the last column where there are conditions that dictate, when it is practical, the use of a specified amount of test weight.

NEWMA recommends Table 4. be modified as follows:

Table 4. Minimum Test Weights and Test Loads ¹					
Device capacity	Minimums (in terms of device cap				
	Test weights (greater of)	Test loads ²	(where practicable)		
0 to 150 kg (0 to 300 lb)	100 %				
151 to 1 500 kg (301 to 3 000 lb)	25 % or 150 kg (300 lb)	75 %			
1 501 to 20 000 kg (3 001 to 40 000 lb)	12.5 % or 500 kg (1 000 lb)	50 %	Test weights to dial face capacity, 1 000 d, or test load to used capacity,		
20 001 kg+ <u>to</u> <u>250 000 kg</u> (40 001 lb+ to 500 000 lb)	12.5 % or 5 000 kg (10 000 lb)	25 % ³	if greater than minimums specified		
250 001 kg (500 001 lb)	12.5 % or 30 000 kg (62 500 lb)	<u>25 % ³</u>	should be tested to capacify		

¹ If the amount of test weight in Table 4 combined with the load on the scale would result in an unsafe condition, then the appropriate load will be determined by the official with statutory authority.

Where species weight factor = $540 \text{ kg/m}^2 (110 \text{ lb/ft}^2)$ for cattle, $340 \text{ kg/m}^2 (70 \text{ lb/ft}^2)$ for calves and hogs, and $240 \text{ kg/m}^2 (50 \text{ lb/ ft}^2)$ for sheep and lambs]

320-9 Appendix D; Definitions for Tare Mechanism, Gross Weight Value, Net Weight, Net Weight Value, Tare, and Tare Weight Value

Source: National Type Evaluation Technical Committee (NTETC) Weighing Sector

Recommendation: Modify the definition for "tare mechanism" and add new definitions for "gross weight value," "net weight," "net weight value," "tare," and "tare weight value" to Appendix D.

Amend the following definition for "tare mechanism:"

tare mechanism. A mechanism (including a tare bar) designed for determining or balancing out the weight of packaging material, containers, vehicles, or other materials that are not intended to be included in net weight determinations **and setting the indication to zero when the tare object is on the load-receiving element:**

1. by reducing the weighing range for net loads [e.g., subtractive tare where 15 kg Gross Weight – 5 kg <u>Tare Weight = 10 kg maximum Net weight]</u>, or

2. <u>without altering the weighing range for net load on mechanical scales [additive tare mechanism (e.g., tare bar on a mechanical scale with a beam indicator)].</u>

The tare mechanism may function as:

- 1. <u>a non-automatic mechanism (load balanced by an operator)</u>,
- 2. a semi-automatic mechanism (load balanced automatically following a single manual command),
- 3. <u>an automatic mechanism where the load is balanced automatically without the intervention of an operator</u>. An automatic tare mechanism is only suitable for indirect sales to the customer (e.g., prepackaging scales).

[2.20<u>, 2.24</u>]

Add the following new definitions to Appendix D:

gross weight value. Indication or recorded representation of the weight of a load on a weighing device, with no tare mechanism in operation.[2.20, 2.24]

net weight. See the current edition of NIST Handbook 130 Uniform Weights and Measures Law Section 1.10. [2.20, 2.24]

<u>net weight value.</u> Indication or recorded representation of the weight of a load placed on a weighing device after the operation of a tare mechanism. [2.20, 2.24]

tare. The weight of packaging material, containers, vehicles, or other materials that are not intended to be part of the commodity included in net weight determinations. [2.20, 2.24]

tare weight value. The weight value of a load determined by a tare mechanism. [2.20, 2.24]

In addition to the above proposed changes SWMA also recommends adding the complete NIST Handbook 130 definition for "net weight" to Appendix D as follows:

net weight. The term "net mass" or "net weight" means the weight of a commodity excluding any materials, substances, or items not considered to be part of the commodity. Materials, substances, or items not considered to be part of the commodity include, but are not limited to, containers, conveyances, bags, wrappers, packaging materials, labels, individual piece coverings, decorative accompaniments, and coupons, except that, depending on the type of service rendered, packaging materials may be considered to be part of the service. For example, the service of shipping includes the weight of packing materials. [2.20, 2.24]

Discussion: This Weighing Sector proposal is the one of several proposed modifications to Handbook 44 requirements intended to clarify the acceptable tare features already recognized for use in commercial applications. Scales Code requirements do not include sufficient detailed language that identifies all types of tare, defines how tare features must operate, or specifies the net and tare values a scale must indicate and record. Current NIST Handbook 44 requirements that address tare include Paragraphs S.2.1.6. Combined Zero-Tare ("0/T") Key, S.2.3. Tare, S.2.3.1. Monorail Scales Equipped with Digital Indications, and T.N.2.1. General (Tolerances).

The Weighing Sector has developed criteria used to type evaluate tare features based on General Code Paragraph G-S.2. Facilitation of Fraud and other requirements that apply to indicating and recording elements and recorded representations. NTEP laboratories find that it has become increasingly difficult to solely base its compliance decisions on Paragraph G-S.2. because the general nature of the language results in multiple interpretations. Type evaluation criteria are published in NCWM Publication 14, however, this document is not in wide distribution in the weights and measures community. Also, only a limited number of weights and measures officials, device manufacturers, and device owners and operators are regular participants in Weighing Sector meetings where tare evaluation criteria are developed and discussed. Additionally, it is difficult for parties responsible for the design, use, and test of the tare feature to interpret and apply technical requirements published in Publication 14. This results in differing interpretations of Handbook 44 requirements.

In 2006, the NTETC Weighing Sector formed a Tare Work Group to review existing tare requirements and make recommendations about how tare is to operate on a single range scale, multiple range scale, and multi-interval scale. The work group also was asked to develop, where necessary, recommendations for changes to Publication 14, Handbook 44, and Handbook 130, and to provide guidance to the Weighing Sector on type evaluation requirements.

The work group is currently developing proposals to amend Handbook 44 requirements to: (1) ensure that a tare feature operates in a manner that increases the accuracy of net weight determinations, (2) clearly state what information and values are permitted and required for indicated and recorded representations of net weight and tare weight, and (3) identify the types (e.g., semiautomatic and stored) of tare weight values that are determined at the time objects are weighed or tare weight values are determined prior to the time objects are weighed. At its 2006 meeting, the Weighing Sector agreed to submit a proposal the NCWM S&T Committee to amend Handbook 44 Appendix D by amending the term "tare mechanism" and adding new tare definitions to ensure a uniform understating of the terminology used in Handbook 44.

SWMA supports the proposal, but also believes the wording to the definition for "net weight" should appear in Appendix D rather than have the reader refer to NIST Handbook 130 for that information. Consequently, SWMA recommends adding the complete definition of "net weight" to the proposal as shown in the recommendation above.

324 AUTOMATIC WEIGHING SYSTEMS

324-1 S.1.2. Value of Division Units and T.2.1. General

Source: National Type Evaluation Technical Committee (NTETC) Weighing Sector

Recommendation: Add a new note to Paragraph S.1.2. and amend Paragraph T.2.1. as follows:

S.1.2. Value of Division Units. - The value of a division d expressed in a unit of weight shall be equal to:

- (a) 1, 2, or 5; or
- (b) a decimal multiple or submultiple of 1, 2, or 5.

Note: The requirements that the value of the scale division be expressed as 1, 2, or 5, or a decimal multiple or submultiples of 1, 2, or 5 does not apply to net weight value that are calculated from gross and tare weight indications where the scale value of the gross weight is different from the scale value of the tare weight(s) on multi-interval or multiple range scales. For example, a scale indicating in 2 g divisions in the lower range or segment and 5 g divisions in the higher range or segment may result in net values ending in three (3) or eight (8). (Amended 200X)

T.2.1. General. – The tolerance values are positive (+) and negative (-) with the weighing device adjusted to zero at no load. When tare is in use, the tolerance values are applied from the tare zero reference (zero net indication); the tolerance values apply to the <u>net weight indication for every possible tare load using</u> certified test loads only. (Amended 200X)

In addition to the above proposed changes, SWMA recommends the Committee also consider modifying Paragraph S.2.2. as follows:

S.2.2. Tare. - On any automatic weighing system the value of the tare division shall be equal to the value of the scale division. The tare mechanism shall operate only in a backward direction (i.e., in a direction of underregistration) with respect to the zero-load balance condition of the automatic weighing system. A device designed to automatically clear any tare value shall also be designed to prevent the automatic clearing of tare until a complete transaction has been indicated.

Note: On a computing automatic weighing system, this requires the input of a unit price, the display of the unit price, and a computed positive total price at a readable equilibrium. Other devices require that a transaction or lot run be completed.

Note: This requirement does not apply to multi-interval scales or multiple range scales when the value of tare is determined in a lower range.

(Amended 2004 and <u>200X</u>)

Discussion: In 2006, the NTETC Weighing Sector formed a Tare Work Group to review existing tare requirements, and make recommendations about how tare is to operate on a single range scale, multiple range scale, and multi-interval scale. The work group was also asked to develop, where necessary, recommendations for changes to Publication 14, Handbook 44, and Handbook 130, and to provide guidance to the Weighing Sector on type evaluation requirements.

This proposal, which was developed by the Tare Work Group and is supported by the Weighing Sector, adds a new note to Paragraph S.1.2. The note recognizes display and printing of net weight values in divisions other than the scale division used in the display of gross weight, resulting in a more accurate net weight determination.

The proposal also amends Paragraph T.2.1. to clarify that tolerances also apply to net weight indications regardless of the gross load on the scale. The Tare Work Group reviewed OIML R 76 "Nonautomatic Weighing Instruments" for corresponding requirements and to determine if there were areas where Handbook 44 could be aligned with international recommendations. Based on that review, the work group agreed that Handbook 44 Paragraph T.2.1. should be modified to state that tolerances also apply to net load indications.

The Tare Work Group discussed problems associated with determining the appropriate direction to round tare on multiinterval scales and multiple range scales whenever gross and tare weights fall in different weighing segments on a multiinterval scale or in different weighing ranges on multiple range scales. In these cases, the scale division size for the gross and tare weights differ; however, the net weight must be in mathematical agreement with the gross and tare weights that are indicated and recorded by the device (i.e., gross weight - tare weight = net weight).

The problem arises when the tare weight is rounded up to the next larger scale division, where the net weight falls in the higher segment or range. For example, a 0.004 lb tare weight in a weighing range or segment with 0.002 lb intervals in the lower weighing range or segment may round to zero when the net weight falls in the upper weighing range with 0.01 lb intervals:

10.05 lb Gross Weight <u>- 0.004 lb Tare Weight</u> = 10.046 lb the Mathematically Correct Net Weight;

However, due to rounding the device indicates 10.05 lb Net Weight

This results in a transaction where a commodity is bought or sold on the basis of gross weight or when an insufficient amount of tare weight is taken and results in a misrepresentation of net weight for the transaction. Essentially, the rounding of tare that falls in a smaller division in either direction (e.g., a 0.015 lb. tare weight rounded down to zero or to 0.01 lb or up to 0.02 lb) provides a less accurate net weight.

The Tare Work Group developed a corresponding proposal for the Scales Code to clarify the appropriate scale division values and the application of tolerances to tare weights for those devices (See S&T Item 320-3).

SWMA supports the recommendation; however, SWMA also agreed that an additional note should be added to Paragraph S.2.2. Tare as shown in the recommendation above to eliminate any conflict with proposed changes to Paragraph S.1.2. The new note proposed for Paragraph S.2.2. clarifies that the requirement does not apply to multi-interval scales or multiple range scales when tare is determined in the lower range of those scales.

324-2 Note 5 Table S.7.b. Notes for Table S.7.a.; Temperature Range

Source: National Type Evaluation Technical Committee (NTETC) Weighing Sector

Recommendation: Amend Note 5 in Table S.7.b. as follows:

Required only on automatic weighing systems if the <u>temperature</u> range <u>on the NTEP CC</u> is other <u>narrower</u> than <u>and within</u> -10 EC to 40 EC (14 EF to 104 EF). (Amended 200X)

SWMA recommends including a new Paragraph T.2.X. Subsequent Verification Examination that was inadvertently overlooked by the Weighing Sector as follows:

T.2.X. Subsequent Verfication Examination. – For subsequent verification examinations, the tolerance values apply regardless of the influence factors in effect at the time of the conduct or the examination. (Also see G-N.2.)

Background/Discussion: Periodically questions arise about whether or not a device is suitable for field operation based on the limited temperature range the device is subjected to under type evaluation. In other cases a device's suitability is questioned when the temperature limits marked on the device were narrower or wider than -10 °C to 40 °C (14 °F to 104 °F) temperature range. In 2005, the NTETC Weighing Sector established a policy where its laboratories only will test and issue approvals over the -10 °C to 40 °C (14 °F to 104 °F) temperature range because of the limitations of its environmental chambers and safety concern for laboratory staff working in high temperature environments. In 2006, the Weighing Sector asked for the Committee's interpretation of how to apply temperature limits given the climatic conditions developed in the laboratory and those that exist in real-world environments.

Most NIST Handbook 44 Section 2 and Section 5 device codes include requirements for marking equipment with temperature limits. Many of those codes include specific conditions for marking a temperature range on commercial equipment. Weighing devices are required to perform within tolerance over the temperature range of -10 °C to 40 °C (14 °F to 104 °F). The temperature range of -10 °C to 40 °C was selected as the low and high climatic limits of operation to: (1) align U.S. and International Organization of Legal Metrology (OIML) environmental conditions for performance tests, (2) keep within a range that represents at least 80 % of the climatic conditions tor temperature requirements in military specifications for electronic equipment, and (3) duplicate the conditions typically found in most outdoor environments. Current OIML recommendations for temperature test levels for electronic equipment are left to each nation based on the severity of climatic conditions where the instrument is typically in use.

In 1991, the NCWM S&T Committee provided guidelines on how to apply temperature range marking requirements and the appropriate use of a scale that is marked for use in a temperature range narrower or wider than -10 °C to 40 °C. Device manufacturers are required to mark the equipment's working temperature range when it is narrower or wider than -10 °C to 40 °C. Device codes also specify the minimum difference between the lower and upper limits of the temperature range based on the device's accuracy class.

The following text is excerpted from the 1991 Final Report S&T Item 320-3 and includes the Committee's interpretation on marking requirements for temperature ranges on scales that should be included in the training modules for scales:

Temperature Range of -10 °C to 40 °C (14 °F to 104 °F):

This case has two parts. The conclusion is the same whether or not the temperature range is marked on the device.

If temperature range is not marked on the scale, the device must be accurate over the range of -10 °C to 40 °C (14 °F to 104 °F). If a temperature range is not marked on a device with an NTEP Certificate of Conformance, it was tested over a temperature range of -10 °C to 40 °C (14 °F to 104 °F). The device may be used outside the specified temperature range, but the device must be accurate in the environment in which it is used, since Scales Code Paragraph T.N.2.3. Subsequent Verification Examination applies.

If a device is marked with a temperature range of -10 °C to 40 °C (14 °F to 104 °F), the marking is not considered to be a limitation to its application. The device may be used outside the specified temperature range, but the device must be accurate in the environment in which it is used since Scales Code Paragraph T.N.2.3. Subsequent Verification Examination applies. The marking of the temperature range -10 °C to 40 °C (14 °F to 104 °F) is optional.

Marked Temperature Range <u>Less</u> Than $-10 \degree C$ to $40 \degree C$ (14 °F to 104 °F):

If a device is marked with a temperature range less than -10 °C to 40 °C (14 °F to 104 °F), then the environment in which the device is used must be evaluated to determine if the device is suitable for use in that application. The device cannot be used in an environment in which the temperatures exceed the temperature limits marked on the device.

Marked Temperature Range <u>Greater</u> Than –10 °C to 40 °C (14 °F to 104 °F):

If a device is marked with a temperature range greater than -10 °C to 40 °C (14 °F to 104 °F) this indicates a scale of higher quality than a scale without a temperature marking for devices within the same accuracy class and of the same scale division value. This fact may be used as a marketing tool in the same manner as the maximum number of scale divisions, n_{max} . A scale marked with a wider temperature range is tested during type evaluation over the marked temperature range.

No changes were made to Handbook 44 temperature marking requirements until 1998 when 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 required that Class III, III L, and IIII devices be marked with a temperature range if the temperature limits are *other* than -10 °C to 40 °C (14 °F to 104 °F). However, some sections of Publication 14 stated that these devices must be marked with a temperature range if the temperature range is *narrower* than -10 °C to 40 °C (14 °F to 104 °F).

In 1998, the Weighing Sector discussed instances where is it 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 R 76 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 °C to 40 °C (14 °F to 104 °F)."

Subsequently, the Committee considered a proposal to modify Scales Code Table S.6.3.a. Note 5 to correct the discrepancy. A proposal was heard to modify Table S.6.3.b. Notes for Table S.6.3.a., Note 5. to read as follows:

 Required only on Class III, III L, and IIII scales <u>devices</u> if the <u>temperature</u> range <u>on the NTEP CC</u> is other <u>narrower</u> than <u>and within</u> −10 °C to 40 °C (14 °F to 104 °F). [Nonretroactive as of January 1, 1986]

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, hearing no unfavorable comments on this proposal, the Conference adopted the item, and it remains the same today.

In 2006, the Sector also questioned why requirements that address instances where equipment operates in temperatures outside of the -10 °C to 40 °C temperature range such as Scales Code Paragraph T.N.2.3. Subsequent Examination Verification are not included in all weighing device codes. The Sector also noted there are inconsistencies in the language that specifies temperature requirements throughout the weighing device codes. The Weighing Sector agreed this is an important issue, yet it gave the Committee time to research the codes and policies established on this topic. Consequently, the Weighing Sector request became a developing item on the Committee's agenda.

The Weighing Sector agreed that no evaluation would be conducted for temperature ranges outside of laboratory capabilities, which are -10 °C to 40 °C while it awaits input from the Committee. The Weighing Sector's *ad hoc* policy is contrary to an earlier 1991 NTEP policy where NTEP agreed to require testing to demonstrate compliance with the

manufacturer's specified temperature range, including accepting data from recognized and approved laboratories for tests performed at temperature ranges that exceeded the -10 °C to 40 °C temperature range.

At their fall 2006 meetings, the regional weights and measures associations reviewed the proposal in its former status as a Developing Item (Part 4, Item 1) that did not include any recommendation to modify Handbook 44. WWMA agreed the proposal is predominantly a type evaluation laboratory issue and should be considered at the next meeting of the Automatic Weighing System Work Group. WWMA may revisit the issue at a later date if it is deemed necessary to modify Handbook 44 to adequately address temperature requirements. WWMA recommends the issue remain a developing item while the NCWM S&T Committee and Weighing Sector develop a position that can be published for review.

CWMA recommends that the Automatic Weighing Systems Code reflect NIST Handbook 44 Scales Code T.N.8. Influence Factors. NEWMA supports the CWMA recommendation.

At the conclusion of its 2006 meeting, the Weighing Sector agreed that the NIST technical advisor would prepare and submit to SWMA proposed changes to Note 5 as shown in the recommendation above. The Sector agreed that any further changes to other codes should first be evaluated by the appropriate NTETC Sector.

The Weighing Sector believes that its 2005 technical policy defining the scope of temperature testing conducted by NTEP is not in conflict with the 1991 S&T Committee's position since the 1999 modification to Note 5 resulted in a link of the temperature range marking requirement to the range listed on the CC. The Sector also agreed that the CC does not cover devices marked with a larger temperature range than what is listed on the CC. For example, an NTEP CC that lists a temperature range of -5 °C to +30 °C would not cover a device that was not marked with a temperature range or a device marked with a -5 °C to +45 °C temperature range.

The Sector agrees with the concerns from the NTEP laboratories that testing over increasing temperature ranges may become a health and safety issue and that existing temperature chambers are limited in their capabilities to perform temperature tests over wider ranges. Additionally, the Sector recommends the NCWM S&T Committee reconsider amending the Committee's 1991 position on temperature requirements to correspond with the Sector's current marking requirement policy that recognizes health and safety concerns and the limitations of NTEP laboratory testing equipment.

SWMA agreed that the Weighing Sector's proposal should move forward as a voting item on the NCWM S&T Committee's agenda. However, SWMA also recommends including in the proposal a new Paragraph T.2.X. Subsequent Verification Examination that was inadvertently overlooked by the Weighing Sector as shown in the recommendation above.

330 LIQUID-MEASURING DEVICES

330-1 S.1.2.3. Value of the Smallest Unit

Source: Carryover Item 330-2. (This item originated from the National Type Evaluation Technical Committee (NTETC) Measuring Sector and first appeared on the Committee's 2006 agenda.)

Recommendation: Modify NIST Handbook 44 Paragraph S.1.2.3. as follows:

S.1.2.3. Value of Smallest Unit. – The value of the smallest unit of indicated delivery, and recorded delivery if the device is equipped to record, shall not exceed the equivalent of:

- (a) 0.5 L (1-pt-0.1 gal) on retail-devices with a maximum rated flow rate of 750 L/min (200 gal/min) or less.
- (b) 5 L (1 gal) on wholesale devices with a maximum rated flow of more than 750 L/min (200 gal/min).

This requirement does not apply to manually operated devices equipped with stops or stroke-limiting means. (Amended 1983<u>, and 1986, and 200X</u>)

CWMA recommended a corresponding new user requirement become part of the proposal as follows:

<u>UR.XX</u> - Value of Smallest Unit. – The value of the smallest unit of indicated delivery, and recorded delivery if the device is equipped to record, shall not exceed the equivalent of:

- (a) 0.5 L (0.1 gal) on devices with a flow rate of 750 L/min (200 gal/min) or less.
- (b) 5 L (1 gal) on devices with a flow rate of more than 750 L/min (200 gal/min).
- (c) 5 L (1 gal) on meters with a rated maximum flow of 375 L (100 gal/min) or more used for aviation turbine fuels.

This user requirement allows high-volume meters to sell in 1 gal increments to the end user, and requires 0.1 gal increment deliveries only from meters delivering at less than 200 gal/min. (Added 200X)

SWMA and the Measuring Sector recommended an alternate proposal to amend Paragraph S.1.2.3. as follows:

S.1.2.3. Value of Smallest Unit. - The value of the smallest unit of indicated delivery, and recorded delivery if the device is equipped to record, shall not exceed the equivalent of:

- (a) 0.5 L (1-pt-0.1 gal) on retail-devices with a maximum rated flow rate of 750 L/min (200 gal/min) or less.
- (b) 5 L (1 gal) on wholesale devices with a maximum rated flow of more than 750 L/min (200 gal/min).
- (c) 5 L (1 gal) on meters with a rated maximum flow rate of 375 L (100 gal/min) or more used for jet fuel aviation refueling systems.

This requirement does not apply to manually operated devices equipped with stops or stroke-limiting means. (Amended 1983, 1986, and 200X)

Background/Discussion: In 2004 the definition of a "retail device" in NIST Handbook 44 was modified to include all devices used to measure product for the purpose of sale to the end user. At that time, the Committee believed all affected parties were aware of the proposal and there was no opposition to the change. The Committee had not considered applications where very large deliveries are made to the end user, typically at high flow rates. After the 2005 edition of Handbook 44 was published and distributed, NIST WMD received input from a weights and measures jurisdiction that routinely tests large meters used to deliver fuel to fishing fleets and other large ocean-going boats. The jurisdiction stated that the average fuel delivery is approximately 300 000 gal and may be as much as 1 million gal. Prior to the revision of the definition of "retail," the value of the smallest unit of the indicated delivery for these devices was permitted to be 1 gal. Most of these devices have mechanical registers which make it impractical to have a smallest indicated unit of 0.1 gal at the high flow rates used for such large deliveries. Because the fuel is being delivered to the end user, the jurisdiction believes this is a retail delivery. However, with the revisions to the definition of retail device, Handbook 44 now requires a smallest unit of delivery of not more than 0.5 L (1 pint or 0.125 gal) for these devices.

To remedy this issue the NTETC Measuring Sector developed the original recommendation above. The Measuring Sector believed that, because the maximum flow rate for many applications has increased, 200 gal/min is an appropriate "break point" for determining what the smallest unit of measurement should be.

At the 2006 NCWM Interim Meeting, it was suggested that the Committee revisit the discussion on suitability of liquidmeasuring devices that was discussed by NCWM in 1991 through 1993. In these earlier discussions, NCWM was unable to reach a consensus on any changes to NIST Handbook 44, and the item was withdrawn from the Committee's agenda. The Committee was informed that there was interest expressed at the 2005 NTETC Measuring Sector Meeting in developing new criteria addressing suitability as it relates to flow rate, minimum measured quantity (MMQ), and smallest unit of measure for applications using liquid-measuring devices. The Committee encourages the NTETC Measuring Sector to pursue development of suitability requirements for submission to the Committee for consideration and is interested in input from the weights and measures community on this approach.

During the 2006 NCWM Annual Meeting, the Committee received input from several aircraft refueling equipment manufacturers that there is a safety concern with stationary refueling systems capable of delivering jet fuel through two different size hoses at different flow rates using two different meters. In this scenario, the operators of the refueling facility want both meters to have the same unit of indication, that is, 5 L (1 gal). The Committee understood the concern, but was reluctant to modify the recommendation based on the limited information available at the meeting. The Committee believes the aircraft refueling industry should propose a change during the next Conference cycle through the NTETC Measuring Sector and the regional associations. However, the Committee recognized that a legitimate problem may exist with existing jet aircraft refueling equipment and encourages weights and measures jurisdictions to consider safety implications before taking official action on existing jet aircraft refueling. There was adopted, weights and measures officials could be perceived as ignoring safety issues for aircraft refueling. There was lack of support for the proposal without an exemption for jet aircraft refueling; therefore, the Committee changed the status of the proposal from a voting item to an information item to allow sufficient time to address these areas of concern.

At its fall 2006 meeting, CWMA agreed with the original recommendation, but proposed that an accompanying User Requirement also be added to Handbook 44 to address aircraft refueling applications.

At its fall 2006 meeting WWMA discussed the proposed amendment to Paragraph S.1.2.3. and also discussed the issues the aviation industry has when refueling aircraft using a combination of meters that register in 0.1 gal and 1 gal increments. The aviation industry was not present at that meeting, but WWMA was made aware that the aviation industry has safety concerns about under-filling fuel tanks and tanks with an unbalanced load because of misread meter indications. WWMA recognizes industry's concerns but believes this is a training issue for aircraft refuelers. WWMA agreed there is an immediate need to provide guidelines for fishing fleet and similar applications; therefore, it recommends the proposal move forward as written as a voting item.

At their fall 2006 meetings, the NTETC Measuring Sector and SWMA reviewed a proposal to add a new Subparagraph (c) to the original proposal to address jet aircraft refueling applications. The Measuring Sector considered the proposed marked maximum flow rate of 575 L (150 gal/min), but agreed it should be changed to 375 L (100 gal/min) to harmonize with a similar requirement in Handbook 44 Section 3.31. Paragraph S.1.1.3. Value of the Smallest Unit (c). The Measuring Sector and SWMA supported the modified proposal as shown above. SWMA agreed to forward the proposal to the NCWM S&T Committee with the recommendation that the new Subparagraph (c) be added to the original proposal.

330-2 S.1.6.5.5. Display of Quantity and Total Price and S.1.6.5.6. Display of Quantity and Total Price, Aviation Refueling Applications

Source: Southern Weights and Measures Association (SWMA)

Recommendation: Modify Handbook 44 Section 3.30. Paragraph S.1.6.5.5. and add a new Paragraph S.1.6.5.6. as follows:

S.1.6.5.5. Display of Quantity and Total Price. – <u>Except for aviation refueling applications, Ww</u>hen 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 min or until the next transaction is initiated by using controls on the device or other customer-activated controls. [Nonretroactive as of January 1, 1994] (Added 1992) (Amended 1996 and 200X)

<u>S.1.6.5.6.</u> Display of Quantity and Total Price, Aviation Refueling Applications. – The quantity must be displayed throughout the transaction. The total price must also be displayed; however, it may either be displayed throughout the transaction or only at the end of the transaction. The total price display can appear on the face of the dispenser or through a controller adjacent to the device. Total price and quantity must be displayed for at least 5 minutes or until the next transaction is initiated by using controls on the device or other customer-

activated controls. A printed receipt including, at a minimum, the total price, quantity, and unit price must also <u>be provided.</u> (Added 200X) [Nonretroactive as of January 1, 200X]

Background/Discussion: The typical self-serve installation for aviation fuels does not use an analog or digital "gasoline dispenser" that simultaneously displays money and volume. In most cases the self-serve user interface is a credit card console/controller that handles the transaction. These devices display only quantity and are not set up for the simultaneous display of quantity and total price. This proposal provides an exemption for aviation refueling based on the position that the information provided by equipment that complies with the proposal is sufficient for the customers using these devices. The submitter stated that pilots are an informed group of customers that necessarily pay attention to the quantity of fuel put onboard the aircraft during a refueling operation, but are less concerned about the total cost of the commodity until the end of the transaction. As long as a unit price is posted, they have the ability to verify that the total price is correct provided it is available at the end of the transaction.

Some designs of aviation self-serve dispensing systems use a meter-register that is a PD meter that can have a mechanical register and pulser, an electronic register with pulse output, or an "industrial" dispenser with a "volume only display" and a pulse output. The meter-register sends pulses to the credit card console/controller. In the example given, all three components including the console/controller have separate NTEP certificates, but were not evaluated as a system.

In June 2006 a jurisdiction reviewed a couple of planned installations and informed the installing company that the equipment was a "retail motor-fuel dispenser" that required continuous display of "quantity and total sale." In addition some "card-lock systems" were opened to other self-serve customers. This started a series of exchanges of information between several parties including two console/controller manufacturers, several equipment suppliers, and the weights and measures jurisdiction.

The submitter stated that a typical "retail gasoline dispenser" that has the simultaneous display of quantity and total price capability is not designed, in terms of materials of construction, for aviation gasoline or jet fuel, nor does it have the appropriate flow rate capability. Some higher flow rate dissel dispensers have the materials of construction that are not compatible with some aircraft fuels and do not have the flow rate capability required for stationary jet refueling applications.

There is one small company that assembles dispensers that could put together a unit to meet the materials of construction and minimum flow requirements. Their NTEP certificate currently covers diesel and gasoline applications on their simultaneous display dispenser. They could use the appropriate aviation-approved materials of construction components for applications up to 50 gpm and simultaneously display quantity and total price. However, these devices are not commonly used in the aviation industry and the maximum flow rate of the meter would be inadequate for jet fuel applications.

At their fall 2006 meetings, the NTETC Measuring Sector and SWMA reviewed a proposal to allow devices used in aircraft refueling to either display or print the total price and quantity delivered at the end of the transaction. The Measuring Sector took no position on the proposal because most members did not feel qualified to make an informed recommendation concerning the proposal. SWMA believed that a printed receipt containing, at a minimum, the quantity, unit price, and total price should be required for all deliveries; therefore, SWMA modified the above proposal to allow devices used in aircraft refueling to display the total price either throughout the transaction or at the end of the transaction provided a printed receipt was available. SWMA agreed to forward the modified proposal to the NCWM S&T Committee with the recommendation that it be a voting item on the Committee's 2007 agenda.

330-3 S.3.1. Diversion of Measured Liquid

Source: Carryover Item 330-4. (This item originated from the Central Weights and Measures Association (CWMA) and first appeared on the Committee's 2006 agenda.)

Recommendation: Amend Paragraph S.3.1. as follows:

S.3. Discharge Lines and Valves.

S.3.1. Diversion of Measured Liquid. - No means shall be provided by which any measured liquid can be diverted from the measuring chamber of the meter or its discharge line. Two or more delivery outlets may be installed only if automatic means are provided to ensure that:

- (a) liquid can flow from only one outlet at a time, and
- (b) the direction of flow for which the mechanism may be set at any time is clearly and conspicuously indicated.

A<u>n</u> manually controlled outlet that may be opened for purging or draining the measuring system or for recirculating, if recirculation is required in order to maintain the product in <u>a deliverable state</u>, suspension shall be permitted only when the system is measuring food products or agri-chemicals. Effective <u>automatic</u> means shall be provided to prevent passage of liquid through any such outlet during normal operation of the measuring system and to inhibit meter indications (or advancement of indications) and recorded representations while the outlet is in operation.

(Amended 1991, 1995, and 1996, and 200X)

WWMA recommends an alternate proposal as follows:

S.3.1. Diversion of Measured Liquid. - No means shall be provided by which any measured liquid can be diverted from the measuring chamber of the meter or its discharge line. Two or more delivery outlets may be installed only if automatic means are provided to ensure that:

- (a) liquid can flow from only one outlet at a time, and
- (b) the direction of flow for which the mechanism may be set at any time is clearly and conspicuously indicated.

A<u>n</u> manually controlled outlet that may be opened for purging or draining the measuring system or for recirculating, if recirculation is required in order to maintain the product in <u>a deliverable state</u>, suspension shall be permitted only when the system is measuring food products, or agri-chemicals, biodiesel or biodiesel blends. Effective <u>automatic</u> means shall be provided to prevent passage of liquid through any such outlet during normal operation of the measuring system and to inhibit meter indications (or advancement of indications) and recorded representations while the outlet is in operation.

(Amended 1991, 1995, and 1996 and 200X)

Background/Discussion: CWMA noted that the requirements in Paragraph S.3.1. in Section 3.30. of the Liquid-Measuring Devices Code and Paragraph S.4.1. Diversion of Measured Product in Section 3.37. of the Mass Flow Meters Code of NIST Handbook 44 are not consistent with each other. Paragraph S.3.1. bans manual valves for recirculating product or for purging or draining the measuring system, except for foods and agri-chemicals. Paragraph S.3.1. allows manual valves but appears to ban automatic valves by omission and it makes no distinction for types of products measured as long as the system meets the specified requirements.

Cold weather and physical characteristics make recirculation necessary for a number of products not currently recognized in Paragraph S.3.1., for example, #6 fuel oil and B100 biodiesel. Liquid-measuring devices exist which have NTEP CCs for these high viscosity products; however, the current wording of Handbook 44 forces vendors of these products to use mass flow meters if they wish to recirculate their product in order to keep it in a deliverable state. This appears to be the unintended result of the fact that the two codes were written at different times with input from different segments of industry. CWMA does not believe retailers of these products should be restricted to using only mass flow meters for commercial measurements if other suitable technologies are available. Likewise, CWMA believes that both manual and automatic valves are suitable for recirculating products in discharge lines of liquid-measuring devices, and the requirements for either type of meter should be the same.

The Committee believes that the means to prevent passage of liquid through any such outlet during normal operation of the measuring system and to inhibit meter indications should be automatic. Therefore, the Committee modified the proposal accordingly.

At the 2006 NCWM Annual Meeting, this proposal along with a corresponding proposal to modify the Mass Flow Meters Code was presented for a vote. The Committee received input regarding the inappropriateness of allowing diversion of product on all types of liquid-measuring device applications. The vote on this item did not yield a sufficient number of positive or negative votes for the item to be accepted or defeated and, therefore, it was returned to the Committee for further action. The corresponding proposal under 2005 S&T Agenda Item 337-2, S.4.1. Diversion of Measured Product to similarly modify the Mass Flow Meters Code, was adopted.

At its fall 2006 meeting, CWMA affirmed that this proposal was drafted primarily to address an inequity between mass flow meters and other liquid-measuring devices in handling biodiesel and #6 fuel oil at terminals and marine fuelers. The objections to the proposal at the 2006 NCWM Annual Meeting seemed to center on the idea that passage of this proposal would lead to widespread recirculation at retail motor-fuel pumps and in applications with products other than biodiesel and #6 fuel oil. Minnesota, which adopted this proposal by rule in 2005, has experienced neither of these phenomena.

It has been Minnesota's experience that, because recirculation systems are expensive to install and operate, industry has utilized it only as a last resort. Recirculation has been confined to the marine fuelers on Lake Superior, to a handful of terminals in the coldest regions of the state, and to milk meters where recirculation has always been allowed. Minnesota has received no complaints about these installations and has seen no evidence that allowing recirculation has led to the facilitation of fraud.

Because recirculation is allowed in Paragraph S.4.1. of the Mass Flow Meters Code for any product requiring it to be kept in deliverable form, failure to pass this proposal will not prevent recirculation of products other than milk or agrichemicals dispensed from mass flow meters. It will just force device owners to purchase mass flow technology for that purpose instead. This seems like an undue burden on the device owner who might already own meters which are otherwise suitable for the intended product. It also seems to be an unfair competitive advantage for mass flow technology over other meter technologies. That advantage was created by the lack of harmonization between the Liquid-Measuring Devices Code and the Mass Flow Meters Code in Handbook 44, and the inequity can be ended by passage of this proposal.

WWMA discussed an objection to the proposal because it would allow diversion and recirculation of all products. It may not be appropriate to recirculate some products and might facilitate fraudulent practices. WWMA recognizes that jurisdictions are preparing for sales of alternate fuels, but is uncertain at what point biodiesel products and blends need recirculating (low temperature limits or specific blend ratios). The WWMA S&T Committee agreed the list of products should be limited, but should recognize all biodiesel products and blends. Consequently, WWMA developed an alternate proposal as shown in the recommendation above and recommended it move forward as a voting item on the 2007 CWMA S&T Committee's agenda.

SWMA agreed with WWMA's position.

NEWMA supports the original proposal as written in the recommendation above.

331 VEHICLE-TANK METERS

331-1 Temperature Compensation

Source: Carryover Item 331-3. (This item originated from the Western Weights and Measures Association (WWMA) and first appeared on the Committee's 2000 agenda.)

Discussion/Background: The Committee is considering a proposal to modify Section 3.31. Vehicle-Tank Meters (VTM) Code by adding the following new paragraphs to recognize temperature compensation as follows:

S.2.5. Automatic Temperature Compensation for Refined Petroleum Products.

S.2.5.1. Automatic Temperature Compensation for Refined Petroleum Products. - A device may be equipped with an automatic means for adjusting the indication and registration of the measured volume of product to the volume at 15 °C (60 °F) where not prohibited by state law.

S.2.5.2. Provision for Deactivating. - On a device equipped with an automatic temperature-compensating mechanism that will indicate or record only in terms of liters (gallons) compensated to 15 °C (60 °F), provision shall be made for deactivating the automatic temperature-compensating mechanism so the meter can indicate and record, if it is equipped to record, in terms of the uncompensated volume.

S.2.5.3. Gross and Net Indications. - A device equipped with automatic temperature compensation shall indicate and record, if equipped to record, both the gross (uncompensated) and net (compensated) volume for testing purposes. If both values cannot be displayed or recorded for the same test draft, means shall be provided to select either the gross or net indication for each test draft.

S.2.5.4. Provision for Sealing Automatic Temperature-Compensating Systems. - 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 an automatic temperature-compensating system cannot be disconnected and no adjustment may be made to the system.

S.2.5.5. Temperature Determination with Automatic Temperature Compensation. - For test purposes, means shall be provided (e.g., thermometer well) to determine the temperature of the liquid either:

(a) in the liquid chamber of the meter, or

(b) immediately adjacent to the meter in the meter inlet or discharge line. (Added 200X)

S.5.6. Temperature Compensation for Refined Petroleum Products. - If a device is equipped with an automatic temperature compensator, the primary indicating elements, recording elements, and recording representation shall be clearly and conspicuously marked to show the volume delivered has been adjusted to the volume at 15 °C (60 °F). (Added 200X)

<u>N.4.1.3.</u> Automatic Temperature-Compensating Systems for Refined Petroleum Products. - On devices equipped with automatic temperature-compensating systems, normal tests shall be conducted:

- (a) by comparing the compensated volume indicated or recorded to the actual delivered volume corrected to 15 °C (60 °F); and
- (b) <u>with the temperature-compensating system deactivated, comparing the uncompensated volume</u> <u>indicated or recorded to the actual delivered volume.</u>

The first test shall be performed with the automatic temperature-compensating system operating in the "as-found" condition. On devices that indicate or record both the compensated and uncompensated volume for each delivery, the tests in (a) and (b) may be performed as a single test. (Added 200X)

N.5. Temperature Correction for Refined Petroleum Products. - Corrections shall be made for any changes in volume resulting from the differences in liquid temperatures between the time of passage through the meter and the time of volumetric determination in the prover. When adjustments are necessary, appropriate petroleum measurement tables should be used. (Added 200X)

T.2.1. <u>Automatic Temperature-Compensating Systems.</u> - The difference between the meter error (expressed as a percentage) for results determined with and without the automatic temperaturecompensating system activated shall not exceed:

(a) 0.4 % for mechanical automatic temperature-compensating systems; and

(b) 0.2 % for electronic automatic temperature-compensating systems.

<u>The delivered quantities for each test shall be approximately the same size.</u> The results of each test shall be within the applicable acceptance or maintenance tolerance. (Added 200X)

UR.2.5. Temperature Compensation for Refined Petroleum Products.

UR.2.5.1. Automatic.

UR.2.5.1.1. When to be Used. - In a state that does not prohibit, by law or regulation, the sale of temperature-compensated product, a device equipped with an operable automatic temperature compensator shall be connected, operable, and in use at all times. An electronic or mechanical automatic temperature-compensating system may not be removed, nor may a compensated device be replaced with an uncompensated device, without the written approval of the responsible weights and measures jurisdiction.

[Note: This requirement does not specify the method of sale for products measured through a meter.]

<u>UR.2.5.1.2.</u> Invoices. - An invoice based on a reading of a device that is equipped with an automatic temperature compensator shall show that the volume delivered has been adjusted to the volume at 15 °C (60 °F).

(Added 200X)

This proposal was developed to provide design requirements and testing criteria for vehicle-tank metering systems that incorporate temperature compensation capability. When this item was originally submitted, several officials reportedly were confused about the specific applications of a meter covered by an NTEP CC that included a temperature-compensation feature. WWMA acknowledged some jurisdictions permit temperature-compensated deliveries in applications not addressed by NIST Handbook 44. Some states do not allow the use of automatic temperature compensation for the delivery of products using a VTM. At the 2002, 2003, and 2004 NCWM Annual Meetings, this proposal did not achieve a majority vote to pass or fail and was, therefore, returned to the Committee for further consideration.

The L&R Committee has kept a corresponding item addressing the method of sale for petroleum products on its agenda. The L&R Committee proposal allows voluntary temperature compensation for the sale of petroleum products, other than LPG through a meter with a flow greater than 20 gal/min and petroleum products sold through retail motor-fuel devices.

During the 2005 NCWM Annual Meeting, a manufacturer stated that the number of requests for retail motor-fuel dispensers with temperature compensation capability is increasing. The Committee has heard differing positions on this issue from the regional associations indicating that: (1) temperature compensation is also a "method of sale" issue and the proposal should be retained as an information item until an accompanying method of sale requirement is added to NIST Handbook 130; (2) the proposal has strong support, and the item should go forward for adoption; and (3) there is not enough support for this item; therefore, it would not be adopted.

At the 2006 NCWM Interim Meeting, the Committee agreed to leave the proposal on its agenda as an information item because the L&R Committee was closer to fully developing a corresponding method of sale requirement that is acceptable to most jurisdictions. The Committee encourages the weights and measures community to review the newly modified L&R item along with the proposal shown in the recommendation above and provide input to the Committee prior to the 2007 January NCWM Interim Meeting.

At their fall meetings CWMA, NEWMA, SWMA, and WWMA supported the proposal as a voting item on the 2007 NCWM S&T Committee's agenda. SWMA recommended the development of an additional requirement that the device have the ability to display both gross and net indications, but did not have a specific proposal to offer at the time. WWMA reiterated that temperature-compensated devices are already in use in some jurisdictions.

For additional background on this item, see the 2000 through 2006 S&T Final Reports.

356(a) GRAIN MOISTURE METERS

356-1 S.1.2. Grain or Seed Kind and Class Selection and Recording and Table S.1.2. Grain Types Considered for Type Evaluation and Calibration and Minimum Acceptable Abbreviations

Source: NTETC Grain Analyzer (GA) Sector

Recommendation: Modify Handbook 44 Section 5.56.(a) Grain Moisture Meters Paragraph S.1.2. and Table S.1.2. to include minimum acceptable abbreviations for "multi-class" grain moisture calibrations as follows:

S.1.2. Grain or Seed Kind and Class Selection and Recording. - Provision shall be made for selecting and recording the kind and class <u>or multi-class group</u> (as appropriate) of grain or seed to be measured. The means to select the kind and class <u>or multi-class group</u> of grain or seed shall be readily visible and the kind and class <u>or multi-class group</u> of grain or seed shall be readily visible and the kind and class <u>or multi-class group</u> of grain or seed shall be clearly and definitely identified. Abbreviations for grain types <u>and multi-class groups</u> indicated on the meter must meet the minimum acceptable abbreviations listed in Table S.1.2. <u>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 four-character abbreviations listed in Table S.1.2. (Amended 1993, and 1995, and 200X)</u>

Table S.1.2. Grain Types and Multi-Class Groups Considered for Type Evaluation and Calibration and Their				
Minimum Acceptable Abbreviations				
Grain Type	Minimum Acceptable Abbreviation	Grain Type	Minimum Acceptable Abbreviation	
Corn	CORN	Soybeans	SOYB	
Durum Wheat	DURW	Two-Rowed Barley	TRB	
Soft White Wheat	SWW	Six-Rowed Barley	SRB	
Hard Red Spring Wheat	HRSW	All-Class Barley*	BARLEY	
Hard Red Winter Wheat	HRWW	Oats	OATS	
Soft Red Winter Wheat	SRWW			
Hard White Wheat	HDWW			
<u>All-Class Wheat*</u>	<u>WHEAT</u>			
Wheat Excluding Durum*	<u>WHTEXDUR</u>			
Sunflower seed (Oil)	SUNF	Long Grain Rough Rice	LGRR	
-		Medium Grain Rough Rice	MGRR	
		All-Class Rough Rice*	<u>RGHRICE</u>	
Grain Sorghum	SORG <u>or</u>	Small Oil Seeds (under		
	MILO	consideration)		

[Note: Grain Types marked with an asterisk (*) are "Multi-Class Calibrations"]

[Nonretroactive as of January 1, 1998]

(Table Added 1993) (Amended 1995, and 1998, and 200X)

Background/Discussion: The GMM Chapter of Publication 14 was recently amended to allow multi-class moisture calibrations. "Multi-class" describes the grouping of grain classes in a calibration. There are a total of 15 NTEP grains, which include wheat, rice and barley, all of which have different classes. There are six classes of wheat, two classes of barley and two classes of rice. A manufacturer may decide to have (1) a separate calibration for each individual class of wheat, rice or barley, or (2) have a single calibration for all the classes of wheat, barley or rice ("All-Class Wheat, All-

Class Barley, or All-Class Rice"), or (3) have a calibration that includes all the classes of wheat except durum wheat ("WHTEXDUR" Wheat excluding durum). Examples (2) and (3) are "multi-class" calibrations. Currently, the acceptable abbreviations (and grain names) in Table S.1.2. of Handbook 44 do not address the groupings and the names that might be used for selecting and recording "multi-class" calibrations. At its August 2006 meeting, the NTETC Grain Analyzer Sector agreed that "multi-class" groups should be added to Table S.1.2. Grain Types Considered for Type Evaluation and Calibration and Minimum Acceptable Abbreviations and included minimum acceptable abbreviations for "multi-class" groups, and Paragraph S.1.2. Grain or Seed Kind and Class Selection and Recording should be modified to recognize "multi-class" groupings.

Paragraph S.1.2. Grain or Seed Kind and Class Selection and Recording requires that the means to select the kind and class of grain or seed be readily visible and that the kind and class of grain or seed selected be clearly and definitely identified. A multi-class grain calibration that includes all the NTEP classes of a given grain type (e.g., two-rowed barley and six-rowed barley) can be clearly and definitely identified by a single type name (e.g., BARLEY). Similarly, both long-grain and medium-grain rough rice could be identified unambiguously as "rough rice." However, a multi-class grain calibration that does not include all of the NTEP classes of a grain type may not be clearly and definitely identified using a single grain type name (e.g., wheat). For example, a calibration for "all wheat except durum" cannot be labeled "WHEAT" because the grain type "WHEAT" (i.e. "all-class wheat") includes "durum wheat."

At its August 2006 meeting the NTETC Grain Analyzer Sector agreed the originally suggested multi-class groups–soft wheat, hard wheat, red wheat, and white wheat–were confusing and subject to potential misuse. Only the following multi-class groups should be considered for type evaluation:

All-Class Wheat Wheat Excluding Durum All-Class Barley All-Class Rough Rice

A poll of manufacturers present revealed that increasing the four-character display requirement of Paragraph S.1.2. to eight characters would not be a problem with instruments in current production; therefore, it was agreed that up to eight characters could be used for multi-class group abbreviations. The Sector agreed that the sentence specifying the display capacity was not needed because the necessary display capacity was obvious from the number of characters in the longest minimum acceptable abbreviation listed in Table S.1.2.

The Sector agreed to modify Paragraph S.1.2. and Table S.1.2. as shown above and forward its recommendation to the 2007 NCWM S&T Committee for consideration.

SWMA recommended the proposal move forward to the NCWM S&T Committee as a voting item on its 2007 agenda.

Note: The WMD technical advisors agree that adding definitions for "multi-class" and "all-class" groups would assist weights and measures officials in understanding the differences between the two. Prior to the 2007 Interim Meeting WMD will ballot the Sector for approval of a proposed definition for each.

357 NEAR-INFRARED GRAIN ANALYZERS

357-1 S.1.2. Selecting Grain Class and Constituent and Table S.1.2. Grain Types Considered for Type Evaluation and Calibration and Minimum Acceptable Abbreviations

Source: NTETC Grain Analyzer (GA) Sector

Recommendation: Modify NIST Handbook 44 Section 5.57. Near-Infrared (NIR) Grain Analyzers Paragraph S.1.2. Selecting Grain Class and Constituent and Table S.1.2. Grain Types Considered for Type Evaluation and Calibration and Minimum Acceptable Abbreviations to include minimum acceptable abbreviations for "multi-class" constituent (protein, starch, and oil) calibrations as shown below.

S.1.2. Selecting and Recording Grain Class and Constituent. - Provision shall be made for selecting, and recording the type or class or multi-class group of grain and the constituent(s) to be measured. The means to select the grain

type or class <u>or multi-class group</u> and <u>the</u> constituent(s) shall be readily visible and the type or class <u>or multi-class</u> <u>group</u> of grain and the constituent(s) selected shall be clearly and definitely identified in letters (such as HRWW, HRSW, <u>WHEAT</u>, etc. or PROT, etc.). A symbol to identify the display of the type or class <u>or multi-class group</u> 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. <u>Meters shall have the capability (i.e., display capacity) of</u> <u>indicating the grain type using a minimum of four characters in order to accommodate the abbreviations listed in</u> <u>Table S.1.2.</u>

[Nonretroactive as of January 1, 2003]

If more than one calibration is included for a given grain type, the calibrations must be clearly distinguished from one another.

[Nonretroactive as of January 1, 2004]

Table S.1.2. Grain Types and Multi-Class Groups Considered for Type Evaluation and			
Calibration and <u>Their</u> Minimum Acceptable Abbreviations			
Crain Tune	Minimum Acceptable		
Gruin Type	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		
All-Class Wheat*	<u>WHEAT</u>		
Wheat Excluding Durum*	WHTEXDUR		
Soybeans	SOYB		
Two-Rowed Barley	TRB		
Six-Rowed Barley	SRB		
All-Class Barley*	<u>BARLEY</u>		
Corn	CORN		

[Note: Grain Types marked with an asterisk (*) are "Multi-Class Calibrations"]

[Nonretroactive as of January 1, 2003] (Table Amended 2001 and 200X)

(Amended 2003 and 200X)

Background/Discussion: The NIR Chapter of Publication 14 was recently amended to allow multi-class moisture calibrations. "Multi-class" describes the grouping of grain classes in a calibration. There are a total of 15 NTEP grains, which include wheat, rice and barley, all of which have different classes. There are six classes of wheat, two classes of barley and two classes of rice. A manufacturer may decide to have (1) a separate calibration for each individual class of wheat, rice or barley, or (2) have a single calibration for all the classes of wheat, barley or rice ("All-Class Wheat, All-Class Barley, or All-Class Rice"), or (3) have a calibration that includes all the classes of wheat except durum wheat ("WHTEXDUR" Wheat excluding durum). Examples (2) and (3) are "multi-class" calibrations. Currently, the acceptable abbreviations (and grain names) in Table S.1.2. of Handbook 44 do not address the groupings and the names that might be used for selecting and recording "multi-class" calibrations. At its August 2006 meeting, the NTETC Grain Analyzer Sector agreed that "multi-class" groups should be added to Table S.1.2. Grain Types Considered for Type Evaluation and Minimum Acceptable Abbreviations and included minimum acceptable abbreviations for "multi-class" groups, and Paragraph S.1.2. Selecting Grain Class and Constituent should be modified to recognize "multi-class" groupings.

The Sector recommended changes to the GMM Code Table S.1.2. and Paragraph S.1.2. and also recommended modifications to the Near-Infrared Code to provide minimum acceptable abbreviations for multi-class groupings when user selection of a multi-class group is performed using the group name or an abbreviation of the name.

The Sector agreed to modify Paragraph S.1.2. and Table S.1.2. as shown above and forward its recommendation to the 2007 NCWM S&T Committee for consideration.

SWMA Recommendation: SWMA recommended the proposal move forward to the NCWM S&T Committee as a voting item on its 2007 agenda.

Note: The WMD technical advisors believe that adding definitions for "multi-class" and "all-class" groupings would assist weights and measures officials in understanding the differences between the two. Prior to the 2007 Interim Meeting WMD will ballot the Sector for approval of a proposed definition for each.

360 OTHER ITEMS

360-1 International Organization of Legal Metrology (OIML) Report

Many issues before the OIML, the Asian-Pacific Legal Metrology Forum (APLMF), and other international groups are within the purview of the Committee. Additional information on OIML activities will appear in the 2007 Board of Directors Interim agenda and on the OIML website at http://www.oiml.org. NIST WMD staff will provide updates on OIML activities during the open hearing session at the January 2007 NCWM Interim Meeting in Jacksonville, Florida. For more information on specific OIML-related device activities, contact the WMD staff listed in the table below. The OIML projects listed below represent only currently active projects. For additional information on other OIML device activities that involve WMD staff, please contact WMD using the information listed below:

WWMA and SWMA support these issues and the related device activities as an Information Item on the Committee's agenda.

NIST Weights and Measures Division (WMD) Contact List				
Staff	Telephone	E-mail	Responsibilities	Postal Mail or Fax
Mr. Steven Cook (LMDG)	(301) 975-4003	steven.cook@nist.gov	 •R 50 "Continuous totalizing Automatic Weighing Instruments (Belt Weighers)" •R 51 "Automatic Catchweighing Instruments" •R 60 "Metrological Regulations 	All contacts:
			for Load Cells" •R 76 "Non-automatic Weighing Instruments"	NIST WMD 100 Bureau Drive MS 2600
Dr. Charles Ehrlich (ILMG)	(301) 975-4834	charles.ehrlich@nist.gov	 B 10 "Framework for a Mutual Acceptance Arrangement (MAA) on OIML Type Evaluations" TC 3/SC 5 "Expression of Uncertainty in Measurement in Legal Metrology Applications," "Guidelines for the Application of ISO/IEC 17025 to the Assessment of Laboratories Performing Type Evaluation Tests," & "OIML Procedures for Review of Laboratories to Enable Mutual Acceptance of Test Results and OIML Certificates of Conformity" 	Gaithersburg, MD 20899-2600 WMD Tel: (301) 975-4004 Fax: (301) 975-8091

NIST Weights and Measures Division (WMD) Contact List					
Staff	Telephone	E-mail	Responsibilities	Postal Mail or Fax	
Mr. Richard Harshman (LMDG)	(301) 975-8107	richard.harshman@nist.gov	 •R 106 "Automatic Rail-weighbridges" •R 107 "Discontinuous Totalizing Automatic Weighing Instruments" (totalizing hopper weighers) •R 134 "Automatic Instruments for Weighing Road Vehicles In-Motion and Measuring Axle Loads" 		
Ms. Diane Lee McGowan (LMDG)	(301) 975-4405	diane.lee@nist.gov	 •R 59 "Moisture Meters for Cereal Grains and Oilseeds" •R 92 "Wood Moisture Meters- Verification Methods and Equipment" •R 121 "The Scale of Relative Humidity of Air Certified Against Saturated Salt Solution" •TC 17/SC 8 "Measuring Instruments for Protein Determination in Grains" 		
Mr. Ralph Richter (ILMG)	(301) 975-3997	ralph.richter@nist.gov	 •R 35 "Material Measures of Length for General Use" •R 105 & R 117 "Measuring Systems for Liquids Other Than Water" (includes Direct Mass) •R 118 "Testing Procedures and Test Report Format for Pattern Examination of Fuel Dispensers for Motor Vehicles" •TC 3/SC 4 "Verification Period of Utility Meters Using Sampling Inspections" 		
Mr. Wayne Stiefel (ILMG)	(301) 975-4011	s.stiefel@nist.gov	 •TC 8/SC 8 "Gas Meters" (Diaphragm, Rotary Piston, & Turbine Gas Meters) •R 49 "Water Meters" (Cold Potable Water & Hot Water Meters) •R 71 "Fixed Storage Tanks" •R 80 "Road and Rail Tankers" •R 85 "Automatic Level Gauges for Measuring the Level of Liquid in Fixed Storage Tanks" •TC 5/SC 2 "General Requirements for Software Controlled Measuring Instruments" •TC 8/SC 7 P1 "Measuring Systems for Gaseous Fuel" (i.e., large pipelines) •TC 8/SC 7 P2 "Compressed Gaseous Fuels Measuring Systems for Vehicles" 		

NIST Weights and Measures Division (WMD) Contact List					
Staff	Telephone	E-mail	Responsibilities	Postal Mail or Fax	
Dr. Ambler Thompson (ILMG)	(301) 975-2333	ambler@nist.gov	 •D 16 "Principles of Assurance of Metrological Control" •D 19 "Pattern Evaluation and Pattern Approval" •D 20 "Initial and Subsequent Verification of Measuring Instruments and Processes" •D 27 Initial Verification of Measuring Instruments Using the Manufacturer's Quality Management System" •R 34 "Accuracy Classes of Measuring Instruments" •R 46 "Active Electrical Energy Meters for Direct Connection of Class 2" 		
Ms. Juana Williams (LMDG)	(301) 975-3989	juana.williams@nist.gov	•R 21 "Taximeters"		
LIST OF ACRONYMS]	
ILMG – International Legal Metrology	LMDG– Legal Metrology	B – Basic Publication D – Document	R – Recommendation SC – Subcommittee		
Group	Devices Group	P – Project	TC – Technical Committee		

360-2 Developing Items

NCWM established a category of items called "Developing Items" as a mechanism to share information about emerging issues which have merit and are of national interest, but that have not received sufficient review by all parties affected by the proposal or that may be insufficiently developed to warrant review by the Committee. The developing items are currently under review by at least one regional association or technical committee.

Developing Items are listed in Appendix A according to the specific NIST Handbook 44 Code section under which they fall. Periodically, proposals will be removed from the developing item agenda without further action because the submitter recommends that it be withdrawn. Any remaining proposals will be renumbered accordingly.

The Committee encourages interested parties to examine the proposals included in Appendix A and send their comments to the contact listed in each item. The Committee asks that the regional associations and NTETC Sectors continue their work to fully develop each proposal. Should an association or Sector decide to discontinue work on an item, the Committee asks that it be notified.

Michael J. Sikula, New York, Chairman (1)

Carol P. Fulmer, South Carolina (2) Todd R. Lucas, Ohio (3) Brett Saum, San Luis Obispo County, California (4) Kristin J. Young, Colorado (5)

Ted Kingsbury, Measurement Canada, Technical Advisor Richard Suiter, NIST, Technical Advisor Juana Williams, NIST, Technical Advisor

Specifications and Tolerances Committee

S&T Committee 2007 Interim Agenda

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Appendix A

Item 360-2: Developing Items

Part 1, Item 1 Belt-Conveyor Scale Systems: UR.3.2.(c) Maintenance; Zero Load Tests

Source: Western Weights and Measures Association (WWMA)

Recommendation: Modify UR.3.2.(c) as follows:

UR.3.2. Maintenance. - Belt-conveyor scales and idlers shall be maintained and serviced in accordance with manufacturer's instructions and the following:

(c) Zero-load and load (simulated or material) tests, Ssimulated load tests, or material tests, and zero load tests shall be conducted at periodic intervals between official tests in order to provide reasonable assurance that the device is performing correctly.
 (Amended 200X)

The action to be taken as a result of the zero-load tests is as follows: (Added 2000X)

- if the change in zero is less than ± 0.1 %, make no adjustment, record results and proceed to simulated load tests; or
- if the change in zero is ± 0.1 % to ± 0.25 %, inspect the conveyor and weighing area for compliance with UR.2. Installation Requirements and retest.
 (Added 200X)

The action to be taken as a result of the <u>simulated load or</u> material tests or simulated load tests is as follows: (Amended 2002)

- if the error is less than 0.25 %, no adjustment is to be made;
- if the error is at least 0.25 % but not more than 0.6 %, <u>inspect the conveyor and weighing area for</u> <u>compliance with UR.2. Installation Requirements and repeat the test</u> adjustment may be made if <u>the official with statutory authority is notified</u>; (Amended 1991<u>and 200X</u>)
- <u>if the result of tests, after compliance with UR.2. Installation Requirements is verified, remain</u> greater than ± 0.25 %, a span correction shall be made and the official with statutory authority <u>notified</u>
- if the error is greater than 0.6 % but does not exceed 0.75 %, inspect the conveyor and weighing area for compliance with UR.2. Installation Requirements, and repeat the test; (Amended 1991 and 200X)
- if the result of tests, after UR.2. Installation Requirements compliance is verified, remain greater than ± 0.25 %, a span correction shall be made, the official with statutory authority shall be notified and an official test shall be conducted
- if the error is greater than 0.75 %, an official test is required. (Amended 1987 and 200X)

Discussion: NIST Handbook 44 gives limited guidance on what to do with zero-load test results. Belt loss is not the only factor which may require the scale operator to make physical adjustments to the belt-conveyor system to correct for deficiencies. For example, a dirty scale structure or a worn belt scraper will increase the zero reference number and the test results may exceed tolerances.

The scale user/owner has to protect his interest between weighing transactions. At present, some belt-conveyor systems may have error greater than 0.5 % in zero reference over a 24-hour period. The belt is part of tare (net load) on any empty running system and the system must be maintained to within tolerance at all times.

During its 2006 meeting, WWMA recommended the alternate industry proposal shown above. WWMA also recommended the alternate proposal be considered at a future meeting of the USNWG on Belt-Conveyor Scale Systems. WWMA recommended the alternate proposal remain a developmental item to allow sufficient time for a review by the work group. CWMA concurs with WWMA's recommendation.

SWMA agrees with the WWMA recommendation

To comment on this proposal, contact Steven Cook, NIST Technical Advisor to the NTETC Belt-Conveyor Scales Sector, by e-mail at steven.cook@nist.gov, by telephone at (301) 975-4003, by fax at (301) 975-8091, or by postal mail at NIST WMD, 100 Bureau Drive MS 2600, Gaithersburg, MD 20899-2600.

Part 1, Item 2 Belt-Conveyor Scale Systems: UR.2.2.(n) Belt Alignment

Source: Southern Weights and Measures Association (SWMA)

Recommendation: Modify Paragraph UR.2.2.(n) as follows:

UR.2.2. Conveyor Installation

(n) Belt Alignment. – <u>The belt shall be centered on the idlers in the weighing area and shall track in practically the same position whether empty or loaded.</u> The belt shall not extend beyond the edge of the idler roller in any area of the conveyor. (Amended 1998 <u>and 200X</u>)

Discussion: During the 2006 NCWM Interim Meeting, the Committee considered the NCWM review panel's recommendations and heard comments from industry. The review panel indicated the proposal should have included national data that demonstrated a need for modifying Paragraph UR.2.2. and should be a developing item. At that time, one representative from the belt-conveyor scale service industry indicated there are too many factors that influence belt tracking to ensure a belt is centered at all times. The service representative recommended that the belt should not extend beyond the edge of the idler roller in any area of the conveyor on the carrying side or touch holding brackets on the return side to reduce any detrimental affects on accuracy. Industry representatives indicated there is no mechanism available to monitor the belt's tracking 24 hours a day, seven days a week. Industry requested either specifications for what constitutes "center" or an acceptable "range of center" for belt tracking. Although the 2005 SWMA reported the proposal was ready for national consideration, the Committee agreed it is more appropriate to make the proposal a developing item until there is some clear indication that belt alignment can be tracked for maintenance and accuracy purposes.

At its 2006 meeting, WWMA agreed with concerns about the difficulties in tracking belt alignment and agreed it should first be determined if there are mechanisms capable of monitoring this feature before establishing device requirements. Consequently, WWMA recommended this item be withdrawn from the agenda.

CWMA does not believe this proposal should move forward without more information from industry.

In 2006, SWMA recommended the proposal remain a developing item; however, if industry provides no additional input, the item should be withdrawn from the Committee's agenda.

To comment on this proposal, contact Steven Cook, NIST Technical Advisor to the NTETC Weighing Sector, by e-mail at steven.cook@nist.gov, by telephone at (301) 975-4003, by fax at (301) 975-8091, or by postal mail at NIST WMD, 100 Bureau Drive MS 2600, Gaithersburg, MD 20899-2600.

Part 2, Item 1, General Code: T.5. Predominance – Retail Motor-Fuel Devices

Source: Central Weights and Measures Association (CWMA)

Recommendation: CWMA recommends withdrawing its earlier proposal to add a new Paragraph G-UR.4.1.1. to the General Code and replacing it with the following new proposal developed by the Nebraska Weights and Measures Division to add a new Paragraph T.5. to Handbook 44 Section 3.30. as follows:

T.5. Predominance - Retail Motor-Fuel Devices. - The retail motor-fuel devices in service at a single place of business shall be considered maintained in proper operating condition when evaluation of normal test results indicate the following parameters are met:

- (a) <u>The number of meters with minus test errors in excess of one-half maintenance tolerance shall be less</u> than 60 % of the meters at the location, and
- (b) When there are three or more meters of a single grade or type of fuel, the average error of the meters shall not be a minus value exceeding one-half maintenance tolerance. Meter test results that exceed maintenance tolerance shall not be included in determining the average meter error of a single grade or type of fuel.

(Added 200X)

In 1991, this same topic was brought before NCWM as an information item. The intent of the proposal at that time was to provide guidance to states in the interpretation of General Code Paragraph G-UR.4.1. Maintenance of Equipment. In 1993, the State of Wisconsin adopted a policy that defined "predominance" as shown in the proposal. That policy was similar to the one proposed in 1991, except Wisconsin felt that one-third <u>acceptance</u> tolerance was too stringent because there was a need to take into account normal variability in testing procedures, equipment, and environmental conditions found in the field. Wisconsin, therefore, adopted a "greater than one-third" <u>maintenance</u> tolerance guideline. In 2003, the Wisconsin policy was further refined by deleting the language "<u>all</u> devices are found to be in error in a direction favorable to the device user." The new guideline for permissible errors was "<u>sixty percent or more</u> of the devices are found to be in error in favor of the device owner/user by more than one-third of the maintenance tolerance." Both of these criteria were seldom used in the field because they made the policy confusing.

Recently NIST conducted a national survey of retail motor-fuel dispenser testing and the results pointed to a need to gain more uniformity in the application of tolerances. There is a wide variation in how different states handle the "predominance" question. Strides should be continually made to gain uniformity. Adoption of the proposed new Paragraph G-UR.4.1.1. would be one step toward gaining greater uniformity. With more than five years of history using the proposed criteria, Wisconsin saw a relatively low number of devices rejected on the basis of "predominance," and most station owners and all service companies have a working understanding of predominance.

In 2005, CWMA agreed to submit the modified proposal to the NCWM S&T Committee with a recommendation that it be placed on the Committee's agenda as a "Developing Item."

At their fall 2006 meetings, NEWMA, SWMA, and WWMA considered an earlier CWMA proposal to modify a General Code requirement and set limits on how to determine predominance in favor of the device operator. NEWMA believes this item is already adequately addressed in Handbook 44 and recommends it be withdrawn from the NCWM S&T Committee's 2007 agenda. SWMA recommends that Developing Item, Part 1, Item 1, on the 2006 NCWM S&T Committee agenda remain "developing" as a user requirement in the General Code. SWMA encourages the jurisdictions to review the proposed policy and try it out. WWMA considered the limits in the proposal too stringent given the effects of temperature and other uncertainties. WWMA is concerned dispensers will be set to the limits in the proposal rather than as close as practical to zero error. The current General Code adequately addresses predominance, and jurisdictions

may establish policy to gain uniformity in determining predominance. Consequently, WWMA recommends this proposal be withdrawn from the agenda.

Part 2, Item 2 Liquid-Measuring Devices: Price Posting and Computing Capability and Requirements for a Retail Motor-Fuel Dispenser (RMFD)

Source: WMD and all Regional Associations

Recommendation: Review and update NIST Handbook 44 requirements that address RMFD pricing and computing capability. This issue is under development and not ready for committee action.

Background/Discussion: In the early 1990s, various sections of the Liquid-Measuring Devices Code in NIST Handbook 44 (including Paragraphs S.1.6.4. Display of Unit Price and Product Identity, S.1.6.5.4. Selection of Unit Price, UR.3.2. Unit Price and Product Identity, and UR.3.3. Computing Device) were modified to address multi-tier pricing applications such as cash-credit. Since that time, marketing practices have evolved and recent years have seen the addition of new practices such as frequent shopper discounts and club member discounts. Numerous questions have been posed to the NIST Weights and Measures Division (WMD) regarding the requirements for posting unit prices, calculation of total price, customer-operated controls, and other related topics such as the definitions for associated terminology.

It is clear from these questions that changes are needed to NIST Handbook 44 to ensure the requirements adequately address current marketplace conditions and practices. WMD has raised this issue with the NCWM S&T Committee and has also discussed a variety of pricing practices with individual state and local weights and measures jurisdictions.

NIST WMD is now in the process of reviewing the existing requirements and their application to current market practices. WMD has collected information on a number of scenarios, including the following: (NOTE: The conditions under some of these scenarios may not typically fall under the authority of weights and measures jurisdictions.)

- (1) Frequent shopper discounts
- (2) Club member discounts
- (3) Discount for prepaying cash (to prevent "driveoffs")
- (4) Prepay at the cashier for credit sales
- (5) Discounts for purchasing store products
- (6) Discounts for purchasing a service (e.g., carwash)
- (7) Targeted group discounts (e.g., Tuesday-Ladies 5 cents off per gallon)

- (8) Full Service
- (9) Self Service
- (10) Progressive discounts based on volume of motor-fuel purchased
- (11) Coupons for discounts on immediate or future purchases
- (12) Rebates (e.g., use of oil company credit card)
- (13) Day-of-the-Week Discounts

WMD is interested in receiving input from the weights and measures community about the various practices and pricing structures in use. Working with input from the weights and measures community, WMD plans to introduce proposed modifications to current requirements through the regional weights and measures associations and technical committees. In the meantime, WMD welcomes opportunities to discuss this issue at regional weights and measures associations to ensure the issue is adequately addressed.

WWMA acknowledged that marketing practices change on a daily basis and the task to ensure Handbook 44 codes address each scenario is monumental. However, WWMA encourages NIST in its efforts to tackle this ongoing issue. Therefore, WWMA recommends this issue be considered and move forward to the national level as a developing item.

CWMA recommends that the State Directors compile information regarding whether or not they are enforcing the Liquid-Measuring Devices Code in NIST Handbook 44 (including Paragraphs S.1.6.4. Display of Unit Price and Product Identity, S.1.6.5.4. Selection of Unit Price, UR.3.2. Unit Price and Product Identity, and UR.3.3. Computing Device). If they are not enforcing the specific code requirement, it should be determined why not (for example, overriding state statute). Information is to be sent to:

James Truex, Chief Division of Weights and Measures 8995 E. Main Street Reynoldsburg, Ohio 43068 Phone: (614) 728-6290 Fax: (614) 728-6424 E-mail: truex@mail.agri.state.oh.us

NEWMA looks forward to further development of this item.

SWMA recommends adding this item to the NCWM S&T Committee's 2007 Agenda as a developing issue.

To comment on this proposal, contact NIST technical advisors to the NCWM S&T Committee: Richard Suiter at richard.suiter@nist.gov, or by telephone at (301) 975-4406, or Juana Williams at juana.williams@nist.gov or by telephone at (301) 975-3989, or either by fax at (301) 975-8091, or by mail at NIST WMD, 100 Bureau Drive MS 2600, Gaithersburg, MD 20899-2600.

Part 3, Item 1 Water Meters: UR.2.1. Accessibility for Reading.

Recommendation: Add a new Paragraph UR.2. to Handbook 44, Section 3.36. Water Meters, as follows:

UR.2. Accessibility for Reading. - A water meter shall be so located that there is reasonable access to obtain a reading by means of the primary indicating element or a remote indicating element. Otherwise, it shall be the responsibility of the device owner or operator to make available, within 24 hours of a request being received by the owner or operator from a current lessee, mortgagee, or titleholder, the necessary labor and support to provide the consumer a means to obtain a meter reading, provided such requests are made with a frequency consistent with the normal billing cycle of the utility.

WWMA also considered an alternate proposal developed by California to add new Paragraph UR.2.1. to the Water Meters Code as follows:

UR.2.1. Accessibility of Customer Indication. - An unobstructed standing space of at least 30 in wide, 36 in deep, and 78 in high shall be maintained in front of an indication intended for use by the customer to allow for reading the indicator. The customer indication shall be readily observable to a person located within the standing space without necessity of a separate tool or device.

Industry Position: The industry proposal is intended to assist enforcement personnel in properly and uniformly enforcing the applicable regulations for obtaining meter readings. The proposed language is more appropriate than: 1) trying to define inherently ambiguous and subjective terms like "reasonable" and "ordinary circumstances" or 2) defining specific height requirements that insure visibility for customers and/or officials. Proposed new Paragraph UR.2.1. Accessibility for Reading should be added to Section 3.36 Water Meters Code of Handbook 44 because there needs to be language which describes acceptable and applicable provisions.

Industry members stated that existing language in General Code Paragraphs G-UR2.1.1. and G-UR.3.3. includes terms such as "reasonable" and "readily observable" which are subjective requirements; it is not possible to understand the installation requirements without relying on each local authority's interpretation of these terms, which varies even within the same jurisdiction.

Water submetering locations are in a vast majority of cases NOT chosen by the Service Agency or the property/meter owner, but are dictated by the engineers and architects who use both national and state building and plumbing codes as their primary guide.

The regulation which is most commonly cited on notices of violation for register visibility issues is Paragraph G-UR.3.3. Position of Equipment. Handbook 44 defines <u>direct sale</u> as "*a sale in which both parties in the transaction are present when the quantity is being determined…*,". Industry notes that Paragraph G-UR.3.3 is being misapplied and should have no bearing on a water submeter since both parties are **not** present when the quantity is determined. Furthermore, the antonym of a direct sale would be an indirect sale. NIST Handbook 130, Packaging and Labeling, Section 11. Exemptions, Subsection 11.1.1 Indirect Sale of Random Packages gives examples of indirect sales, several of which are

exact examples of how water submetering is paid for. Examples of such indirect methods include: on-line bill payments, phone bill payments, fax bill payments, and bill payments by mail.

Since water submetering is a commodity which is billed on a monthly cycle and since water submetering is not a direct sale where both parties are present at the time of the transaction, accessibility requirements for reading water meters should not be the same as those enforced on direct sale devices where transactions take place frequently and with both parties present.

If the interpretation of the terms "reasonable and readily observable" continue to be enforced as they are currently many meter owners will choose to abandon their systems for alternative billing methods such as "remote utility billing service" (RUBS) because replumbing existing water lines within walls is costly to building and coop/condo owners. This is especially true because there is no framework in place to know how to perform such a plumbing retrofit so that the work will be compliant with all interpretations of "reasonable" and "readily observable."

A detailed, 12-month sampling of call center complaints from California properties showed that not a single complaint about the difficulty in obtaining a water meter reading had been received.

Regional Association Positions:

NIST Handbook 44, Water Meters Code Paragraph S.1.1.1. General permits a remote display as long as it is "readily accessible to the customer."

The industry proposed language is no more definitive than existing language. The industry proposal removes the requirement for providing a readily accessible customer indicator. The alternative language would remove the vagueness from the current requirement while providing flexibility to installers.

Property owners do not read the indicators on each meter or they would be placed in a more convenient reading location. With remote reading, however, many meters are now being placed in inaccessible locations. Hardware is being installed to permit remote readings for billing purposes, but not for customers use.

Complaints have been lodged where the remote billing did not match the meter readings and we believe customers should be able to easily monitor their actual use without involving the property owner. Occasionally disputes exist between the property owner or manager and tenants that make requesting assistance a less desirable solution to reading a meter for verification.

The industry in California has been advised that remote customer indications are permissible. However, industry has not submitted devices for California type evaluation. Between better planning for the installation of future meters and submitting remote indicators to be approved for use by customers, this problem can be resolved in a manner more consistent with other device applications.

WWMA considered a proposal developed by industry and an alternate recommendation developed by California. The industry proposal permits access to indications either through a primary indicator, remote indicator, or requires the operator to provide a means for customer access to meter indications when given 24 hours notice within a billing cycle. The California proposal specifies the dimensions for a clear, unobstructed perimeter surrounding the device to ensure accessibility for viewing meter indications.

WWMA acknowledged that a device used to submeter a utility service is commercial equipment that presents a unique set of circumstances because the customer making the purchase does not observe the entire measurement operation, but receives a bill on a periodic cycle based on meter indications. In some cases, the operator/meter owner may be offsite and not required to observe primary meter indications, and may not be familiar with the unusual plumbing configurations that make it difficult to install an accessible meter and to read a meter. Consequently, no one General Code or Water Meter Code requirement appears to provide a complete and uniform set of guidelines that specify all conditions for making meter indications available so that the consumer can verify the measurement and allow the official to conduct an inspection. Some jurisdictions have developed policies to address this situation. In 2002, Paragraph S.1.1. was modified to ensure that when indications are remote they remain accessible to the customer.

In any case, requirements and jurisdiction policies should address the needs of the customer and the official for access to meter indications without placing an undue burden on the operator or customer, and they should not deter a customer from making a legitimate complaint. It is essential in the marketplace to have all components used in determining utility charges transparent; this includes meter indications that are available to all parties involved in the transaction.

WWMA agreed that each proposal has some elements necessary to address meter accessibility and indicator accessibility. Therefore, WWMA recommends the proposal become a developing item to allow time to rework the text so that there are uniform guidelines to fully address accessibility and include the following points: (1) Installation and location is such that there is no obstruction of the meter or indications and (2) Indications are accessible for viewing by the customer and official without the use of tools separate from the device.

WWMA encourages the California Division of Measurement Standards and industry to work together to develop a proposal for regional consideration.

At the fall 2006 CWMA Meeting, there was discussion that LP gas, natural gas, and electric meters should be included in this proposal; however, CWMA did not submit any additional language at this time.

SWMA supported the proposal moving forward as a developing item on the NCWM S&T Committee's 2007 Agenda.

To comment on this proposal, contact Ken Lake, California Division of Measurement Standards, by e-mail at klake@cdfa.ca.gov or by telephone at (916) 229-3047.

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Professional Development Committee Interim Agenda

Agatha Shields, Chairman Franklin County Weights & Measures Columbus, Ohio

400 INTRODUCTION

D C

The Professional Development Committee (Committee) will address the following items at the National Conference on Weights and Measures (NCMW) 2007 Interim Meeting.

Table A identifies the agenda items in the Report by Reference Key Number, Item Title, and Page Number. An item marked with an **'T'** after the reference key number is an informational item. An item marked with a **'D'** after the reference key number is a developing issue. The developing designation indicates an item has merit; however, the item was returned to the submitter for further development before any action can be taken at the national level. Table B lists the Appendices to the Agenda.

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

401 EDUCATION

401-1 I National Training Program (NTP)

Source: The Committee (2003)

Background: The Board of Directors established the Committee at the 2003 NCWM Annual Meeting in Sparks, Nevada. The first critical charge given to the Committee was to develop a National Weights and Measures Professional Development Program in cooperation with its partners including:

- State and local weights and measures departments;
- Private industry at all levels; and
- Technical advisors from NIST Weights and Measures Division and Measurement Canada

NTP will address the following tasks in order of priority:

- (a) The education and professional development of weights and measures officials and the promotion of uniformity and consistency in the application of weights and measures laws and regulations;
- (b) The education of industry personnel with regard to weights and measures laws and regulations, including all areas from device manufacturer to service technician;
- (c) Quality standards for weights and measures activities and programs;
- (d) Safety awareness for weights and measures-related activities; and
- (e) Development of a firm partnership with the state and local weights and measures departments, private industry at all levels, and NCWM. It is critical that NIST Weights and Measures Division (NIST WMD) partner with the Committee, and where appropriate provide technical advice. Measurement Canada is also encouraged to participate in Committee activities.

The Committee began developing the concept of a National Certification Program for weights and measures officials during the 2004 NCWM Annual Meeting. In December 2004, several Committee members met in Harrisburg, Pennsylvania, to develop further the Committee's overall strategic direction of a National Certification Program. The participants agreed that NTP should take the following directions:

- (a) The training responsibility remains with the state and local jurisdictions;
- (b) Administrator training must be added to the curriculum;
- (c) Training and structure used by agencies outside NCWM should be explored and used as models;
- (d) The Central Weights and Measures Association (CWMA) offered to assist the Committee in determining what knowledge and prerequisites are required for beginning and advanced inspectors; and
- (e) The Western Weights and Measures Association (WWMA) recommended course outlines for shorter training courses.

The strategic direction is summarized in Appendix A.

Discussion:

Central Weights and Measures Association (CWMA): CWMA expresses its continued support for a viable National Training Program.

Northeastern Weights and Measures Association (NEWMA): NEWMA continues to support the proposed direction for development of the National Training Program.

Southern Weights and Measures Association (SWMA): SWMA supports the National Training Program.

Western Weights and Measures Association (WWMA): To build upon the recommendation offered by WWMA last year, which was to encourage each regional association to dedicate a portion of their annual meeting to NTP, WWMA would ask the National Professional Development Committee (PDC) to develop a mechanism to add accountability for the successful completion of NTP. This mechanism could be a simple action plan with tasks that have been either assigned or taken on by a region. Each task would be listed including a name of an individual to serve as a contact person for inquiries as to the progress of the task and a date the project will be completed.

401-2 I Create a Curriculum Plan (Carryover Item 401-4)

Source: The Committee (2003)

Background: The Committee agreed the following steps must be addressed for NTP to be viable:

- (a) Develop and maintain a curriculum plan in cooperation with our partners that establishes uniform and consistent training objectives for weights and measures professionals in all fields and at all levels.
- (b) Develop objectives of the curriculum plan representative of a consensus of our partners and organize those objectives by scope, sequence, and level of complexity to assist those developing the curriculum materials.

The development of a training program should follow the steps below:

- (a) Study training programs of outside agencies and state and local jurisdictions.
- (b) Establish knowledge goals for weights and measures officials and administrators.
- (c) Develop curriculum based upon the findings and results of the steps (a) and (b) above.
 - (1) Coordinate the development of curriculum materials to be used in the delivery of training (i.e., lesson plans, digital presentations, slide shows, testing guides, etc.) using a variety of formats (e.g., self-study, traditional instruction).
 - (2) Consider creating a network of interested parties to establish priorities, share training resources, foster cooperation to reduce redundancy, and promote uniformity and consistency.
- (d) Develop examinations, quizzes, or tests based on the content of the materials developed under Item (c)(1).
- (e) Gather and share information from trainers on highly effective training techniques, visual aids and other materials that have been used to facilitate learning. Use as many of these resources as available.

The Committee reviewed the notes from the NIST-sponsored administrators' workshops held in Denver, Colorado, and Baltimore, Maryland, and plans to explore many of these ideas.

During the 2004 Annual Meeting, the Committee discussed the idea of using work groups to develop courses that could be used for self-study or for traditional classroom settings. The Committee agreed that the initial priority should be high profile devices (e.g., motor-fuel dispensers and retail computing scales). The Committee studied the survey results to focus on the memberships' needs and desires.

There were several recommendations submitted by the regional associations. CWMA commented that the Committee should draw upon other sources, both external and internal, for establishment of curricula. WWMA recommended the Committee review current training courses on the NIST website at http://www.nist.gov/owm to establish and identify various levels of training. They also suggested the Committee review and update all existing NIST training courses, and recommends WMD post them on the NIST website. NEWMA recommended the Committee set standards for education that include provisions for field tests.

During the 2005 Interim Meeting, recommendations were made to develop course curriculum with specific learning objectives and development of tests to determine mastery of the learning objectives. Training responsibility to meet the

objectives would rest with the jurisdictions. It was recommended that the Committee oversee development of the tests to be administered for each course. Upon successful testing, certificates would be issued. Protocol for preserving the integrity of the tests and the testing system would need to be developed.

Following the 2006 Annual Meeting, the PDC forwarded a small-scale example format developed in 2002 by the prior Administration and Public Affairs Committee (A&P) and the documents provided by New York as example formats to the regional associations. These documents have been posted to the PDC page on the NCWM website. The regional associations have begun work on their designated curriculum plans. The regional committee responsible for developing the curriculum segment is reminded to focus on a level of competency expected of the entry-level inspector. As the regions develop the curriculum, they should also begin development of the written certification questions needed to verify that the curriculum goals have been met.

Discussion:

CWMA: The PDC will assess the status of the work on small scales curriculum that New York has provided guidance on. Central Association members, Brian Heskin and Agatha Shields, have volunteered to work on the curriculum plan for retail scales, as necessary, or begin work on a package-checking curriculum if retail scales have been done. These work groups will need to be provided with a standardized format for curriculum development and provided with their final goals and objectives to ensure that end product meets the PDC's expectations. CWMA members who have a knowledge base within a specific discipline and are willing to assist in development of the curriculum and certification tests are encouraged to submit their name, area of expertise, and contact information to the NCWM PDC representatives for work group consideration.

NEWMA: Participants were advised CWMA would be developing the curriculum for Package Checking rather the Retail Motor-Fuel Dispensers (RMFD). During discussions, New York indicated it would continue to refine curriculum for small scales including sample test questions. Participants were urged to access the NCWM website to review the three existing portions of the small scales component. A request was made to develop a work group to create another draft curriculum to be provided to the PDC for comment. One item suggested was Vehicle-Tank Meters (VTM) given the Northeast's heavy reliance on home heating oil. The New York state director will contact other NEWMA state directors to elicit their support and recruit participants. If we get the right people in place, we will notify the NCWM PDC Committee.

NEWMA believes the format presented in the New York materials on small capacity scales is a good format and recommends that the NCWM PDC use this as the curriculum model for all future development and make copies available to all curriculum work groups.

SWMA: SWMA submits for consideration the curriculum for Class III and III L Scales outlined in Appendix C.

WWMA: Since the curriculum format for the core competencies has not been decided upon, WWMA is offering for consideration the Retail Motor-Fuel Dispenser Curriculum outlined in Appendix B.

401-3 D Instructor Improvement (Carryover Item 401-7)

Source: The Committee (2003)

Background: One Committee goal is to work with all interested parties to improve the competence of instructors and the uniformity of delivery of curriculum.

The Committee concluded there are two parts to the instructor improvement strategy. The first part is educating trainers in effective methods of instruction. A variety of courses and training methods are available from state, federal, and private sources to develop instructional skills and techniques. Jurisdictions are encouraged to seek out and send selected staff to participate in this type of training.

The second area of instructor improvement is to provide trainers with the knowledge of the technical aspects of all types of devices. The Committee believes that NIST WMD continued leadership and participation is a valuable asset in this area and recommends that WMD continue to provide the technical training for instructors. The Committee invites and

looks forward to working with WMD as a resource to consult with trainers and to work with the Committee to keep the curricula current as changes to the Handbooks occur, new technologies are deployed, and emerging issues develop. While this is not an urgent issue, the item will be retained as a developing item.

Industry has continued to support and sponsor training on their new technology for weighing and measuring devices. NIST has assured the committee that they will continue their work towards providing technical training for the trainers.

Discussion:

CWMA: No comments were received in open hearing on this item.

NEWMA: During discussions, participants were advised that NIST is conducting training on a by request basis and will continue to try to leverage resources to assist state and local programs in meeting training needs. A suggestion was made that field inspectors collect a variety of clip art on the many situations encountered during inspections, which would be useful in the visual part of training. These examples could be useful as part of specific core competency training.

SWMA: SWMA realizes the importance of competent instructors, and recommends the National PDC continue to develop a plan for instructor improvement.

WWMA: WWMA recommends that the National PDC make a request to NIST WMD that they reinstate the Train the Trainer program. Many of those that had completed this program have left state government or retired. Having NIST-certified trainers in specific weights and measures disciplines could be a key element in NTP.

The National Committee, while recognizing the importance of this item, has recommended that this topic be put on hold until progress is made in other areas.

401-4 D Certification (Carryover Item 401-8)

Source: The Committee (2003)

Background: The Committee believes a NCWM certification program should be developed based on a curriculum plan with measurable levels of competency.

The Committee agrees that weights and measures officials must pass written examinations to receive certification. Certificates could be presented at the Annual Meeting to administrators and weights and measures officials who complete training classes and pass the course examination. In 2004, then Chairman Dennis Ehrhart indicated the Board of Directors would consider requests to fund training. The Committee is exploring certification of weights and measures officials as a means to demonstrate competency. WWMA and CWMA submitted extensive comments and recommendations regarding this item prior to the 2004 NCWM Annual Meeting. The Committee has designated this item as developmental.

The 2005 NCWM Certification Proposal was redrafted to reflect NCWM's role in issuance of the certificates and was posted on the NCWM website.

Subsequent to the 2006 NCWM Annual Meeting, all states that had not been previously contacted were sent a letter requesting the name of their State Certification Coordinator (SCC). The state director will be deemed the default SCC in the absence of a designated contact. The list of SCC contacts is posted on the NCWM website.

Discussion:

CWMA: The CWMA W&M directors were asked if they could provide the name of their SCC to the PDC. W&M State Directors requested additional information on the responsibilities of the SCC to enable them to assign the correct person. Some jurisdictions may need to assign more then one SCC depending on the duties and responsibilities of the SCC.

NEWMA: Names of SCCs will be submitted to NEWMA PDC Chair as major points of contact in collecting and disseminating information and materials related to certification. There was discussion about the types of training necessary to obtain certification(s) and types of certification, which would be appropriate to W&M officials. This should be kept in mind as we develop the curriculum.

SWMA: SWMA supports the certification program. The SWMA PDC will forward a list of SCCs from member states to the National PDC.

WWMA: As stated previously, WWMA supports having the states meet the requirements established by NCWM. After demonstrating competency, NCWM would be the appropriate entity to issue the certificate. By exposing weights and measures inspectors to standardized training methodology, this certification process will lead to uniformity. However, we believe it is time to begin the process of building the infrastructure of the program. We must determine what the program will look like and establish the roles of the states and NCWM. It is unrealistic for NCWM to fund a complete certification program. It is critical that the states take an active role in the process if the program is to be successful. WWMA also recommends that the certification program not be limited to weights and measures personnel. NCWM certification could be offered, for a fee, to manufacturers, service companies, or individuals providing they meet the criteria set forth by PDC in NTP.

The Committee recommends a written test, and it is also considering that a field test component be added sometime in the future. Curriculum developers will need to create questions for certification as the training material is developed. Upon successful completion of the certification test, NCWM will be the issuing authority for the certificate.

To maintain testing integrity the testing protocol may need to include provisions for independent third party testing. States without the ability to have third party testing consideration should be allowed to determine how to conduct testing internally to meet the same integrity goals.

Other concerns were expressed that development of certification should be secondary to curriculum development. The Committee is seeking input as to whether NCWM members would like certificates to be issued based on individual device type or covering a broad range of devices categores.

401-5 D Recommended Topics for Conference Training (Carryover Item 401-10)

Source: The Committee (2003)

Background: Bill Sveum and Vince Orr's presentation, Net Content Control of Retail Products during Manufacturing, was added to the NCWM 2006 annual agenda as an educational session.

The Committee also continues to recommend these topics for possible training seminars, round tables, or symposia suitable for presentation at the National Conference meetings:

- (a) Risk-based inspections (Robert Williams, Tennessee, volunteered to present their state's RMFD testing program),
- (b) Marketplace surveys,
- (c) Auditing the performance of field staff (Will Wotthlie, Maryland, volunteered to lead a session on auditing field staff),
- (d) Device inspections using a sampling model, and
- (e) Emerging issues.

Discussion:

CWMA: High fuel prices make cheating on quantity a lucrative business for unscrupulous station owners. Some jurisdictions have uncovered retail motor fuel fraud schemes that operate at nonstandard hours or that employ difficult to detect technology. CWMA is recommending that industry and knowledgeable jurisdictions conduct a technical/information session at the Annual Meeting to update everyone on all the known retail motor fuel fraud schemes. All jurisdictions would then have the knowledge to determine the best approach for fraud detection and deterrence.

NEWMA: No comment.

SWMA: SWMA recommends the following ideas for training: Public Relations, specifically dealing with aggressive/ angry people, and Inspector Investigative Procedures.

WWMA: WWMA would suggest that presentations of general safety issues, defensive driving, the administrative civil penalty process, price verification, and customer service be considered for training topics.

All members are encouraged to submit their ideas for topics to Committee members and to volunteer to lead, present, or moderate a topic.

The PDC continues to recommend that Maryland do a session on auditing of field staff activities and Tennessee do a presentation on their state's RMFD testing program.

The PDC is recommending that NCWM chairperson explore current motor fuel trends and technology updates as a presentation at the next Annual Meeting. Due to the high cost of petroleum products, alternative fuels are growing in popularity. States' inexperience with these products makes this a good topic to invite guest speakers to update the membership on these commodities.

Due to the importance of inspector safety, the PDC sees value in safety discussion. The committee is requesting that NCWM set aside one hour of conference time to devote to the sharing of best practice safety information or to consider a safety presentation. The PDC will provide suggested speakers.

402 PROGRAM MANAGEMENT

402-1 I Safety Awareness (Carryover Item 402-3)

Source: The Committee (2003)

Background: In the past, the Committee's responsibility extended to the identification of safety issues in the weights and measures field and included efforts to increase safety awareness.

At the 2005 Annual Meeting, Past-Chairman Dennis Ehrhart recommended the committee make training its highest priority. The Voluntary Quality Assurance Assessment program, NCWM Associate Membership Scholarships, and safety awareness efforts were carryover items from the Committee on Administration and Public Affairs (A&P) and not the new direction.

Jurisdictions should send their safety reports and issues to their regional safety liaison, who in turn will forward them to Charles Gardner, the NCWM Safety Coordinator. Charles recommends the reports or report summaries be published in the NCWM newsletter. At the 2005 Interim Meeting, a CD-ROM on safety produced for the U.S. Environmental Protection Agency was made available for review. The Committee will ensure that safety awareness is a part of every aspect of training for NCWM stakeholders.

Discussion:

CWMA: No safety reports have been submitted for a few years. The value of learning from a safety incident makes pursuing and obtaining this information worthwhile. CWMA will make the report form accessible on the website for

membership use and will work towards placing the form in the next regional publication. Since accident prevention is the main goal in obtaining safety incident information, there may be value in having jurisdictions share what they have done to prevent injuries and safety incidents. Since W&M inspectors are exposed to flammable commodities routinely, the CWMA PDC is recommending that CWMA consider providing fire safety training through a local fire department at one of its meetings. This type of training would demonstrate the proper use of a fire extinguisher and provide hands on experience in extinguishing a fire.

NEWMA: No comment.

SWMA: The SWMA PDC realizes the importance of safety in the workplace. SWMA encourages that all safety issues be forwarded to the Southern Safety liaison Steve Hadder, Florida Department of Agriculture.

WWMA: WWMA recommends that jurisdictions continue sending safety reports to the NCWM Safety Coordinator Charles Gardner to be summarized and included in the NCWM newsletter and archived on the NCWM website.

Many states have changed their method of approach to conducting business to accommodate safety concerns. The National PDC believes that the sharing of this information has value and suggests that one hour of conference time be devoted to the sharing of best safety practices.

402-2 I Standard Categories of Weighing and Measuring Devices (Carryover Item 402-4)

Source: Western Weights and Measures Association (WWMA) (2005)

Background: The Western Weights and Measures Association (WWMA) Administration and Public Affairs (A&P) Committee recommended that standard categories of weighing and measuring devices be adopted to facilitate development of technical standards, inspector training, data collection, and program management.

The final report of the *Survey of Inspection Statistics Collected by State Weights and Measures Programs* [2002], conducted during mid-2003, observed the absence of standard categories for weighing and measuring devices was a serious obstacle to data collection. For example, the way weights and measures programs categorize scales by type, use, or capacity and capacity ranges often vary considerably. Retail motor-fuel dispensers are currently being counted either by dispenser, grade, or number of hoses or meters. The need for reliable weights and measures statistics is summarized in the final report conclusion as follows:

Accurate statistics would be helpful in many ways at both the state and national level. For instance, performance measures are difficult to develop without statistics. Also, work plans require accurate and detailed statistics. In addition, budget, staffing, and other elements of each state program demand statistics on inspection workloads. Finally, neither individual states nor NCWM will be able to estimate and advertise the value of the nation's weights and measures programs unless reliable statistics are available.

To correct this problem, WWMA developed *Standard Categories for Weighing and Measuring Devices*, and recommends that standard categories for weighing and measuring devices be adopted to facilitate the development of technical standards, inspector training, inspection data collection, and weights and measures program management.

At the 2005 Interim Meeting, the Committee agreed this item should remain informational because standardized categories of weighing and measuring devices have merit, and these should be considered in the future.

Discussion:

CWMA: No comments were received in open hearings on this item.

NEWMA: One participant indicated that this item had merit in defining category breaks in scales and meters to increase uniformity. It may also serve as dividing lines when working on the curriculum and certification issues.

SWMA: SWMA supports this item.

WWMA: WWMA recommends this item be moved forward to stand or fall on its merits. This should be the first finished work product of the PDC. These standardized device categories are essential to the creation of meaningful national statistics.

WWMA drafted the following recommendation for consideration by the Committee. The standard categories of weighing and measuring devices are based on capacity ranges rather than type or use. It is assumed that the inspection test procedures for scales and meters within these capacity ranges are generally similar. Weights and measures programs can adopt the recommended standard categories without changing the manner in which they presently keep records of device inspections by simply adding an extra data field.

Two-letter device category codes could be employed to categorize devices in weights and measures jurisdictions for reporting to NCWM during annual surveys. Otherwise, the data collection procedures already in place would be unaffected. It would be helpful also to add the two-letter device category code to inspection reports.

Subsequent to the 2006 Annual Meeting, NCWM Device Category Codes were updated.

NCWM DEVICE CATEGORY CODES			
DEVICE CODE	CATEGORY	CAPACITY	EXAMPLES
SP	Scale, Precision	< 5 g scale division	jewelry, prescription scales
SS	<u>S</u> cale, <u>S</u> mall	< 300 lb	retail computing scales
SM	<u>S</u> cale, <u>M</u> edium	300 to 5 000 lb	dormant, platform scales
SL	<u>S</u> cale, <u>L</u> arge	> 5 000 lb	livestock, recycler scales, hopper scales, belt
			conveyor
SV	<u>S</u> cale, <u>V</u> ehicle	>40 000 lb	vehicle, railway track scales
MS	<u>M</u> eter, <u>S</u> mall	$<30 \text{ gpm}^1$	retail motor fuel dispensers
MM	<u>M</u> eter, <u>M</u> edium	30 to 200 gpm	vehicle-tank meters
ML	<u>M</u> eter, <u>L</u> arge	>200 <u>gpm</u>	agri-chemical meters, bulk oil meters, loading
			rack meters
MF	<u>M</u> eter, <u>M</u> ass Flow	All	heated tanks of corn syrup (soft drinks)
MW	<u>M</u> eter, <u>W</u> ater	All	water sub-meters for mobile homes &
			apartments
MG	<u>M</u> eter, LP <u>G</u>	All	propane sales
MT	<u>M</u> eter, <u>T</u> axi	All	Taximeters
DT	<u>D</u> evice, <u>T</u> iming	All	clocks in parking garages
DL	Device, Length	All	cordage meters
	Measuring		
GM	<u>Grain Moisture Meter</u>	All	
GA	Grain Analyzer	All	
MD	Multiple Dimension	All	
	Measuring Device		
MC	Meter, Cryogenic	All	

¹Retail motor-fuel dispenser counts should be based on meters except that mid-grades should be added for blenders.

The PDC believes this item is ready to move forward as a voting item.

402-3 D PDC Publication

Source: The Committee (2005)

Many of the PDC items will continue to be carryover items from year to year. The Committee has created a PDC document archive. NCWM will maintain the archive. To eliminate the cost of reprinting the more lengthy items in their

entirety and to preserve the important aspects of the PDC work a legacy document was developed. Following the 2006 Annual Meeting these documents have been archived on the NCWM website for easy access and downloading as needed.

The initial list of PDC work and documents include:

History of PDC Formal Scope of PDC NCWM Board of Directors Charge to the PDC PDC's Role in the NCWM Strategic Plan PDC's Strategic Plan National Training Curriculum Outline Suggested Topics for NCWM Annual Conference Standard Categories of Weighing and Measuring Devices Safety Liaison Contact Information List of State Certification Coordinators and Contacts NCWM Issued Certification Program Voluntary Quality Assurance Assessment Program

Discussion:

CWMA: Perhaps a PDC "handbook" for PDC committee members use should be developed. This would maintain continuity when the makeup of the committee changes.

SWMA: SWMA recommend these items be made available on the NCWM website.

WWMA: WWMA recommends the PDC utilize the newly revamped NCWM website to archive PDC carryover items in order for them to be accessible to NCWM members.

Agatha Shields, Chair, Franklin County, Ohio Kenneth Deitzler, Pennsylvania Ross Andersen, New York John Sullivan, Mississippi Tina Butcher, NIST/W&M Michael Sarachman, Kraft Food Global, Associate Member C. Gardner, New York, Safety Liaison Linda Bernetich, NCWM Staff Liaison

Professional Development Committee (PDC)

Appendix A

Strategic Direction for the Professional Development Committee

The Committee developed their strategic direction to define its roles and responsibilities to NCWM and the weights and measures community. The Committee members wrote principles to guide them in their deliberations and defined four main areas to focus their efforts. The Committee recognizes that its direction and responsibilities may be changed by the Board of Directors.

The guiding principles of the group were:

- Keep things simple,
- Develop programs that are realistic and achievable,
- Minimize redundancy and administrative tasks,
- Recognize that no one size fits all, and
- Meet the needs of W&M officials, service companies, industry, and manufacturers.

The four main areas for focusing their efforts were:

National Training Program – The focus of the National Training Program (NTP) would be to increase technical knowledge, strengthen credibility, and improve the professionalism of the individual weights and measures official. A strong NTP would work to promote uniformity across the nation.

National Certification System – A national certification system would be developed to recognize or accredit weights and measures programs as competent or capable. The program would include requirements around individual training, proper test standards, use of national handbooks, and a data gathering system.

Conference Training Topics – The Committee would be the focal point for gathering and recommending workshops or symposia on leadership, management, and emerging issues to be presented during the annual conference. These topics would provide a forum for the exchange of ideas and discussion of changes in the marketplace.

Uniformity of Data – The Committee would work to develop standard categories for devices and inspection areas so that such things as the number of devices, compliance rates, frequency of inspection and other areas could be compiled and compared at the national level. These statistics could be used to benchmark organizations and to communicate the value of weights and measures to the public and to decision makers (see Item 402-4).

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Appendix B

Curriculum for Retail Motor Fuel Dispensers

Field Inspector's Guide for Determining Compliance of Basic Dispensers with National Institute of Standards and Technology Handbook 44

Retail Motor Fuel Dispensers are sophisticated measuring devices that have evolved over many years to become a convenient, reliable, and accurate means of dispensing fuel into motor vehicles.

Early dispensers were rather crude devices consisting of nothing more than a large graduated flask connected to a fuel storage tank, and a hose to transfer the fuel into a vehicle's tank. Deliveries were usually limited to ten gallons. The hose was of the "dry" type meaning it was empty at the time the fuel was measured in the flask and empty after delivery. It contributed nothing to the measurement process.

Advances in engineering produced dispensers that indicated the quantity of fuel as it was being dispensed and "wet" hoses were introduced. In this type of hose, fuel is present before, during, and after delivery. The condition of the hose and nozzle can affect accuracy. The first mechanisms were of the "clock" type and indicated quantity only. Further developments created analog indications of quantity and price of the delivery. Recent innovations have given us digital electronic indications, which prevail on nearly all equipment encountered in the modern service station.

This guide will concentrate on modern RMFD's with digital electronic indicators

Inspection and testing of a RMFD entails more than checking the device for accuracy of delivery and price charged. It involves safety of the inspector and the public, integrity of standards and equipment, and the knowledge of how to use them correctly.

This guide will help you understand the variety of items you must consider when inspecting and testing RMFD dispensers. It is not the final word on any enforcement action you might take. For that you must rely on the requirements in Handbook 44 *Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices* and you own jurisdiction's laws and regulations.

Safety

Safety and safety awareness is paramount when working around RMFD's. Always remember, SAFETY FIRST!

Inspect your work environment for potential hazards. You don't have to be an expert in safety to be aware of conditions that could be dangerous. Generally, being safe is just a matter of common sense and doing the right thing.

Many policies and regulations will vary from jurisdiction to jurisdiction. It is essential that the inspector be aware of all safety regulations and policies in place at the inspection site and the safety policies established by the inspector's employer. The safety reminders included in this guide contain general guidelines for safety, and are useful in alerting inspectors to the importance of taking adequate precautions to avoid personal injuries. These guidelines can only be effective in mitigating safety hazards if inspectors receive training in hazard recognition and control.

NOTE: The safety reminders included in this guide are not intended to include all possible safety precautions to be taken before proceeding with the inspection of a weighing or measuring device. Information is available on various safety topics from sources such as Occupational Safety and Health Administration (OSHA) at http://www.osha.gov/.

Emergency Procedures:

Always be familiar with emergency procedures and have a plan <u>BEFORE</u> beginning an inspection. After an emergency has developed, crucial time can be lost if emergency procedures are not known. Be familiar with the procedures to follow in the event of a malfunction of your equipment or the device under test.

Be familiar with the nature of any product being dispensed by a device. Know the emergency procedures to follow if a spill should occur or a person has is exposed to the product. Know the location and operation of fire extinguishers and emergency shut-offs, and evacuation procedures.

It is a good idea to keep a list of emergency phone numbers handy at all times in a notebook or on a card. Examples of numbers to keep are the local fire department, emergency medical facility, and other appropriate public safety agencies.

Things to be aware of:

- Environment
- Clothing
- Equipment
- Product

Environment

Pay attention to the location where you will inspect devices. Note any potentially unsafe conditions or situations. Things to look out for include:

- <u>The condition of the dispenser</u>: Is it in good repair? Are there any loose panels, broken accessories that can snag clothing or cause bodily harm? If there are leaks or exposed wiring in or around the dispenser, advise the owner and discontinue testing until the unsafe conditions are corrected.
- <u>Wet or slick conditions:</u> Use caution when moving in wet, slippery areas. These include ice and snow, fuel spills, and rain. Wearing shoes with non-skid soles will provide traction and lessen slippage. If the conditions are excessive, take steps to mitigate the danger. Have the owner clear the area of snow and ice. Cover spilt fuel areas with absorbent material.
- Vehicular and pedestrian traffic patterns: Service stations have vehicles moving in and out at all times. As many an old time inspector will tell you, funnels, safety cones, five-gallon test measures, and even the inspectors themselves are magnets for moving vehicles. Whenever possible, position your vehicle beside the dispensers you are inspecting to afford you some protection from errant vehicles. Curious drivers will often get out of their vehicles and ask questions. They may distract you and cause you do something unsafe, such as spilling fuel, or tripping over the hose or your equipment. There is a potential for their injury also. Provide a safety zone by marking the test site with signs, safety cones, flags, etc.
- <u>Fill pipe cavities:</u> There comes the time when the fuel must be returned to the storage tank. This necessitates the opening of the cap to the fill pipe and creating a hole in the ground. This opening must be adequately marked with signs and or safety cones. The inspector who fails to do this puts his or her employer in litigious jeopardy.
- **Obstructions:** Take care to avoid injury from obstructions in the work area during the course of an inspection such as obstructions on the ground that an inspector might trip over to reach a device to be tested, etc.

Clothing

Determine what protective clothing or equipment you will need.

Synthetic fibers in clothing tend to build up a static charge which can be a dangerous, potential ignition source and this type of clothing should not be worn when working with flammable products. Also synthetic clothing melts at high temperatures; if the person wearing the synthetic clothing is exposed to flames, the clothing may melt and stick to the person's skin to result in severe burns.

Use caution when wearing loose clothing (or hanging jewelry) around machinery as it may become entangled and result in personal injury.

Eve Protection: Appropriate eye protection is recommended when working around hazardous products that may inadvertently splash into the eyes, and eyewash facilities should be considered. Contact lens wearers should be particularly careful to follow the instructions of their eye-care practitioner and local OSHA representative when working around hazardous products.

Personal Protection Equipment: Many types of personal protection equipment are available such as; non-synthetic clothing, coveralls, gloves, barrier creams, non-permeable safety aprons, safety sleeves, safety shoes, respirators, goggles or safety glasses, hearing protectors, and hardhats. OSHA and safety clothing and safety equipment manufacturers can provide additional information concerning the selection of personal protection equipment for a given type of inspection activity.

<u>Safety Shoes:</u> Safety shoes are recommended to prevent personal injury. Safety shoes provide protection from falling objects, from slippage, and static discharge. Many styles and types of safety shoes are available. The American National Standards Institute and safety-shoe manufacturers can provide additional information concerning the selection of safety shoes for different types of inspection activities.

Equipment

Be sure that test measures and other test equipment are properly maintained. Every traceable standard will have a certificate of traceability. Obtain a copy of the certificate, and carry it with the standard at all times.

For equipment powered by electricity, make sure it is equipped with an explosion proof motor. Always check the electrical supply lines on test equipment carefully for signs of wear or damage, take steps to protect these supply lines from damage during use, and correct any potentially hazardous conditions.

<u>**Grounding**</u>: Properly ground the test measure being used when inspecting meters which dispense flammable products. Be sure to connect the grounding wire or jumper cable to bare metal surfaces, not to painted or plastic surfaces.

When testing retail motor fuel dispensers, be sure to:

- Ground the nozzle against the test measure neck when dispensing product.
- Ground the neck of the test measure against the metal funnel when returning product to the storage tank.
- If a test measure is vehicle-mounted, be sure the vehicle is properly grounded.

<u>Safety Cones/Warning Signs</u>: Position safety warning signs or safety cones to block off the work area when the inspection site is exposed to vehicular or pedestrian traffic. When working around flammable liquids warn people of a potential hazard by posting "No Smoking" and "No Open Flame" signs.

<u>Fire Extinguisher</u>: When working with flammable products, make sure the extinguisher you have is **Class B**, suitable for fires involving flammable liquids. Know how to use the fire extinguisher correctly, and contact the local fire department for current information and training.

A modern service station and individual RMFD's have built-in safety features such as break-away nozzles and hoses, and a shear or fire valve that stops the flow of fuel should the dispenser be knocked over by one of those errant vehicles while it is avoiding the inspector. You should also locate the emergency shutoff switch that enables you to cut power to the dispensers in an emergency.

Although it is prudent to have a fire extinguisher within easy reach when working around flammable products, do not rely on your ability to fight a fire. You are not trained in firefighting. If the fire is small i.e., a spill of fuel ignites, you may be able to put it out, but if say the five-gallon test measure is knocked over and the fuel ignited it may be best to retire to a safe distance and call the fire department.

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<u>First Aid Kit</u>: Be sure that a first aid kit is available and that the kit is appropriate for the type of inspection activity. Similar to the fire fighting, you are not a trained paramedic – anything more than a small cut or bruise, call for emergency care. You can check with your local OSHA office or with your departmental safety officer for input on the items to be included in each kit.

Lifting: Although the use of vehicle-mounted test measures is becoming commonplace, there are occasions when you need to carry hand-held five-gallon test measures. When lifting a full test measure, there is less strain on your back to balance the load by carrying two - one in each hand. Remember though, a test measure with five gallons of gasoline weighs around 41 lb.

Transportation of Equipment: Consideration must be given to isolating the inspector from the test measures and other equipment during transportation to and from the inspection site. The inspector must be isolated from hazardous fumes; means of such isolation include, but are not limited to, vehicles outfitted with protective barriers, equipment carriers located outside of the vehicle, and vehicles with separate driver/equipment compartments, etc.

Ensure all equipment is properly secured to avoid exposing the inspector to potential flying projectiles.

Product

Nature of Product: When testing RMFD's, you will be working around many potentially hazardous products. Gasoline and gasoline blends, diesel and diesel blends are hazardous, liquids. Apart from their flammability, they have other characteristics. Obtain a copy of the Material Safety Data Sheets (MSDS's) for each product and review before testing a device. These will provide information such as physical data, fire and explosion hazard information, health hazard information, reactivity data, spill or leak procedures, special protection information, special precautions, toxicological information, and other relevant information. For further information on MSDS's, contact your local OSHA office.

Combustion: Combustion can result when fuel and oxygen are available and an ignition source is present.

Ignition Sources: There are various ignition sources. Probably the one you should be most concerned with is <u>Static</u> <u>Discharge</u> or more correctly electrostatic discharge, which occurs when an electrical charge is built up on an object and discharged when touched by another object that allows the electric charge to flow. The voltage can be anywhere from several hundred to tens of thousands of volts. The discharge is usually evident by a spark, which is the source of ignition that can cause combustion of a flammable product. Other sources include open flames or smoking, metal to metal contact which causes sparking (e.g., metal wrench or hammer on a pipe fitting), a running motor, worn or faulty electrical wiring, improper grounding, and the wearing of synthetic clothing. Because disposable lighters can spark upon impact, inspectors should avoid carrying them while testing RMFD.

ALWAYS USE A **METAL** FUNNEL TO RETURN PRODUCT TO STORAGE TANKS. NEVER USE A PLASTIC SAFETY CONE AS A FUNNEL!! Pouring product into the return fill can build up static electricity; a proper ground must be made by placing the metal neck of the test measure against the metal lip of the funnel before emptying.

Open both sides of the dispenser to allow fumes to dissipate before proceeding with the inspection of the dispenser.

<u>Switch Loading</u>: Do not use a test measure that has been used for drafts of gasoline to measure diesel fuel until you are certain that all gasoline vapors have dissipated. This practice, called "switch-loading" is extremely hazardous because diesel fuel is likely to produce a static charge while being dispensed. Sparks from this charge could easily ignite gasoline vapors inside the measure.

Inspection

Having determined that the location is safe, this is the point at which you begin your inspection of the device. The pretest inspection is your opportunity to determine, amongst other things, the suitability, accessibility, position, and correct installation of the device. You will be applying both Handbook 44 (HB44) General Code and Liquid-Measuring Devices Code requirements. You should always make a thorough visual inspection of a device; however, newly installed devices require additional scrutiny.

With a newly installed device, you must first determine if it has been approved before continuing with the inspection. For existing equipment, check to see if there are any modifications that would make the device not conform to its original approval.

Retroactive and Nonretroactive Requirements: A quick word here about the applicability of regulations, particularly when there are changes to regulations. If a regulation is not noted as being nonretroactive, then by default, it is <u>retroactive</u>, and the regulation applies to and is enforceable on all equipment regardless of its date of manufacture or first commercial use. If a regulation is noted as being <u>nonretroactive</u>, it is enforceable only on equipment manufactured or used commercially after a specific date. (*Nonretroactive requirements are printed in italic type*.)

It may be necessary, therefore, to determine the manufacture date of the equipment and/or the installation date. Handbook 44 does not have a specific requirement for placing the date on the identification (ID) plate of a device. Generally, however, manufacturers have a date code on their ID plate. You or your jurisdiction may need to get a copy of the date coding used by individual manufacturers.

Assistance: If you need special equipment, accessories, labor, etc., to test a device, the person in charge of the device is required to provide them.

Suitability: An RMFD must be suitable for the service and environment in which it is used. Essentially, this means using the device as intended and in the environment for which it was designed. A device designed and approved for use with gasoline or diesel may not be suitable for dispensing gasoline/ethanol blends or biodiesel, and if designed for indoor use, it may not be durable enough for an outdoor location.

Devices with digital indications are restricted to deliveries above 100 divisions. On the standard display of 0.001 gal, the device cannot be used to dispense less than $\frac{1}{10}$ of a gal or 23 in³.

Installation: A dispenser must be installed in accordance with the manufacturer's instructions and its operation and performance is not adversely affected by its mounting.

An obstruction between the dispenser and its primary indicating element is not permitted unless there is a permanent, convenient means for direct communication.

An exception for motor-fuel devices used exclusively for fueling of trucks allows two delivery outlets provided deterrents are in place to restrict flow to the receiving vehicle only.

<u>Position and Accessibility</u>: There is a general requirement that equipment be positioned so that its indications may be accurately read and observed by the consumer and that it is accessible for both testing and for consumer use. In a modern service station, this is not something that is likely to be a problem but be aware of the requirements.

<u>Condition of Equipment</u>: The dispenser and all attached devices and mechanisms necessary for proper operation must be in proper operating condition. Check for things like leaking nozzles, worn or kinked hoses, loose or missing controls or buttons.

Marking: There are several required markings for a device.

Identification: Check that the device has name of the manufacturer, model number and a non-repetitive serial number.

Note: there are exceptions for equipment with no moving or electronic component parts.

Limitations: If product has a use limitation (e.g., maximum or minimum flow rate) this must be marked on the device.

<u>Money-Operated Dispensers</u>: If a money-operated dispenser can be activated and used by the customer and no attendant is present, the device must be marked with the name, address, and phone number of a local responsible party.

Installation: The device must be installed in such a manner that all required markings are readily observable.

Indicating and recording elements: Dispensers must have a primary display indicating quantity and may have a primary printed ticket or receipt. Deliveries are indicated in gallons with decimal subdivisions, and although indications in the metric system (Liters) are permitted, they are non-existent as are fractional subdivisions. The value of the smallest unit is 0.5 L (l pt.) or less on a RMFD

<u>Readability</u>: The indicating and recording elements must be appropriate in design, clear, definite, accurate, and easily read under normal operating conditions.

All operating controls, switches, lights, displays, push buttons, must be clearly identified by uses of words, symbols, or pictograms.

<u>Unit Price:</u> Check that the dispenser is displaying or is capable of displaying, on each face, all the prices for which the device is set to compute or dispense, and the customer can determine these, before delivery of the product.

<u>Auxiliary Indications</u>: If the dispenser has additional indications such as the cashier's display, ensure the auxiliary money value divisions are identical to those of the dispenser display.

Note: It is not necessary for all unit prices to be displayed simultaneously. There are exceptions for fleet sales, other price contract sales, and truck stop dispensers.

Diversion of Measured Liquid: Examine the piping of fuel from the meter. Look for any diversion of the fuel before it reaches the nozzle. Fuel, once measured, cannot be diverted from the measuring chamber or the discharge line. Two or more delivery outlets may be installed if automatic means are installed to insure that the liquid can flow from only one outlet at a time. The direction of flow is indicted conspicuously and clearly.

This restriction does not apply to truck refueling dispensers, provided the diversion to another vehicle is apparent and deterrents are in place. Deterrents include, but are not limited to, physical barriers to adjacent driveways, visible valves, or lighting systems that indicate which outlets are in operation, and explanatory signs.

Discharge Hose: As mentioned earlier hoses can be of the "wet" or "dry" type. However when a pump-discharge unit is equipped with a flexible hose it shall be of the wet-hose type (i.e., the hose must remain full of fuel up to the outlet nozzle), and be reinforced so that the performance of the device is not affected by expansion or contraction of the hose.

The length of the discharge hose in a service station is restricted to a maximum of 5.5 m (18 ft), but for marinas and airports the hose can be up to 15 m (50 ft). Longer hoses are permitted if it can be shown that a longer hose is essential for deliveries to receiving vehicles or vessels (an unnecessarily remote location is not justification).

Hoses longer than 8 m (26 ft) need to be adequately protected from weather and environmental factors when not in use.

Note: It is not necessary that you physically measure each hose; visual determination of the length is adequate in most instances. However if any enforcement action is taken measurement using a traceable measure is essential.

Vapor elimination: Dispensers are required to have means to prevent the passage of vapor and air through the meter. Early equipment, using pumps to lift fuel from storage tanks, needed air (vapor) eliminators. Almost all modern dispensers are served by submersible pumps installed in the storage tanks. Provision for air elimination is built into the discharge manifold (head) of the submerged pumping unit. Additional air elimination is not required at the dispenser.

<u>Security Sealing Provisions</u>: Adjustable components that affect the metrological integrity of the dispenser or any adjustable element controlling deliveries if the delivery rate affects the accuracy of the delivery must be security sealed in such a manner that adjustments are detectable. Mechanical adjustments are protected with a physical seal.

1) Note: Electronic calibration of the measuring element is becoming more common. In those cases where electronic audit trails are used, there may be no physical seal on measuring elements that are electronically calibrated.

2) Note: Information for accessing the electronic audit trail information may be obtained from the Certificate of Conformance (CC) for the device. In some cases, this information was not required on the CC and may have to be obtained from instructions provided by the manufacturer.

<u>Product Identity</u>: For dispensers used in direct retail sales the identity of the product must be conspicuously displayed and posted on each side the dispenser. In addition, a multi-product dispenser must also display conspicuously the grade, brand, blend, or mixture that it is set to deliver.

<u>Product storage identification:</u> Check that the fill connections are marked plainly and visibly as to the product contained in the tanks. Color-coding maybe used as the marking means provided the location have a conspicuously displayed color code key.

Tolerances

Now it is time to determine the tolerances you will use when testing a dispenser. As you become experienced at testing RMFDs, you will automatically know the appropriate tolerances, but it helps to know how they are determined just in case you are presented with a situation you are not familiar with, or you test using a volume other than the standard five-gallon delivery.

There are three tolerances you will apply, acceptance, maintenance, and repeatability.

Use Acceptance Tolerances when inspecting

- 1) Newly installed equipment;
- 2) First official test within 30 days of installation for commercial use;
- 3) First official test within 30 days following corrective action for performance failure;
- 4) First official test within 30 days following major reconditioning or overhaul; and
- 5) Equipment undergoing type evaluation.

Use Maintenance Tolerances for equipment in actual use, except where acceptance tolerance is applicable. This is the tolerance you will use the most.

The **acceptance tolerance** on a five gal delivery is 3 in^3 and for ten gal 5.5 in³.

The **maintenance tolerance** on a five gal delivery is 6 in^3 and for ten gal 11 in³.

For other test drafts, the tolerances are 0.3 % for acceptance tolerance and 0.5 % for maintenance tolerance of the delivered quantity. For example on a 15 gal draft, acceptance tolerance would be 10.3 in^3 and maintenance tolerance would be 17.3 in^3 .

<u>Application of Tolerances</u>: These tolerances are applied to errors of under registration and errors of over registration.

<u>Repeatability</u>: There is also a tolerance on the **repeatability** of multiple tests. First, the results of each test must be within the applicable tolerance (acceptance or maintenance) then the range of the results must be within 40 % of the absolute value of the maintenance tolerance. So, for a five gallon test using maintenance tolerance the values would

have to be within +/-6 in³ for each test and must not differ from each other by more than 2.4 in³ (6 x 0.4) and for acceptance tolerance the values would +/-3 in³ and within 2.4 in³.

Set Up for Testing

Position your vehicle where it affords you the best protection from other vehicles. Ensure the brakes are set and, for a trailer, the wheels chocked. If the provers are attached to the vehicle or trailer, ensure they are grounded and level when used.

Wear appropriate personal protection equipment such as petroleum-resistant, nonskid safety shoes (to prevent possible injury from spills or slipping on slick surfaces), protective clothing, and eye protection to prevent injury from splashed product.

Ground test measure properly and only use a <u>metal</u> funnel when returning product to storage.

Prepare the test measure by "wetting" it down with five gal of fuel, empty using a 30 second pour and a 10 second drain period. Use this method each time the test measure is emptied. For trailer- or vehicle-mounted bottom-drain provers allow a 30 second drain.

Note: Do <u>not</u> use a dry test measure and add one cubic inch to gauge reading to allow for amount of liquid required to "wet" the measure.

Be aware of vehicular and pedestrian traffic when moving between dispenser and storage tanks!

Use proper lifting techniques when lifting test measure!

Be aware of and attempt to eliminate potential ignition sources in or near the inspection site!

Do not leave an activated dispenser unattended!

Testing

Now you are ready to begin the actual test of the device. The main focus will be the accuracy of delivery and repeatability of the device, but there are some other very important tests you will perform.

First, although there are many things about a RMFD for you to consider, as have already been discussed, the most important thing for the user and the customer is the accuracy of the delivery. You, the inspector, will determine that accuracy, and you will rely on the accuracy of your standards and your ability to use them. Treat your standards with care and learn how to use them correctly.

Before you begin the volume tests, here is an explanation of what is involved. For RMFD's you will conduct several "normal" and "special" tests. These tests consist of deliveries into a five gal test measure but at different flow rates as explained below.

Normal test: The normal test is one where delivery is made at the maximum discharge flow rate developed under normal conditions of installation. However, **all** flow rates down to the average of maximum and rated minimum flow rates are "normal" tests.

Example: A dispenser has a maximum flow rate of 9 gal/min, and the flow rate at the lowest notch on the nozzle latch is 5 gal/min, the average flow rate would be 7 gal/min (9 + 5)/2 = 7.

Thus, in this example, all tests at flow rates 9 to 7 gal/min are "normal."

Note: If this first test result is at or near the tolerance limit, repeat this test.

The flow rate of an RMFD is restricted to 40 L (10 gal) per minute by federal regulations. The test drafts will be drafts of one or more amounts, including a draft of at least 19 L (5 gal).

You will not encounter a high volume RMFD, but many diesel dispensers have flow rates exceeding 80 L (20 gal) per minute. For such devices, the test draft will be at least the equivalent to the amount delivered by the device in one minute at its maximum flow rate.

<u>Repeatability</u>: Conduct three normal tests for a check on the repeatability of the dispenser.

Special test: A special test is any test other than a normal test. This test is designed to show if there is any wear in the metering element.

You will perform this test at the slower of the following:

- 19 L (5 gal) per minute, or
- If the device is equipped with an automatic nozzle, the minimum discharge rate at which the device will deliver when set at its slowest setting, or
- The minimum discharge rate posted on the device (RMFDs typically do not have a posted minimum discharge rate).

Begin the Tests

Zero Indication: Turn on the dispenser. If there are values indicated on the dispenser these must be zeroed before the dispenser can be used. With modern dispensers, this is generally automatic, either by turning on the dispenser or by selecting a grade of fuel. The display must be obscured until zero condition is reached. Digital indications usually display 8s and then blank during the return to zero. There must be no way to start delivery until all indications are at zero. Once at zero the indications must not advance until you open the nozzle.

Normal, Special and Repeatability Tests: Conduct three normal tests (for repeatability) and a special test and record the results.

<u>Change of Unit Price</u>: During one of either the normal or special tests, attempt to change the unit price. This should not be possible.

Price Computation: Check that the money values computed by the device are in mathematical agreement with the price per gallon and quantity delivered and that indicated and recorded values agree. Money values must be in mathematical agreement to the nearest one cent of money value. The total sales price must be computed at the sales price for which the product is offered for sale (exclusions for fleet and contract sales and truck refueling).

<u>Receipts:</u> The following information for point of sales systems interfaced with retail motor-fuel dispensers is required on a receipt for products delivered by the dispenser.

- (a) Total volume delivered;
- (b) Unit price;
- (c) Total computed price; and
- (d) Product identity by name, symbol, abbreviation, or code number (nonretroactive as of January 1, 1986).

Radio Frequency and Electromagnetic Interference (RFI/EMI) test (electronic equipment only): The electronics in the dispenser may be sensitive to outside radio frequency or electromagnetic interference. RFI/EMI tests are made during NTEP evaluations of equipment; however, tests should be made at the location to determine if the equipment operation is affected by associated and non-associated equipment. Check that the dispenser is not affected when other

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equipment in the area is operating. Examples: Drink coolers, automobile engines, automobile air conditioners, compressors, legal CB radios in proximity to the device(s), etc.

<u>Check effectiveness of anti-drain means</u>: With the dispenser off, place the nozzle in a test measure or other metal container, raise the hose above head height open the nozzle and determine if fuel leaks from the nozzle.

Note: A few drops of fuel may be contained within the nozzle spout or boot in the case of a vapor recovery nozzle.

Zero-setback interlock: After a delivery cycle has been completed, move the starting lever to a position which shuts off the dispenser (this may require placing the nozzle back in the nozzle retainer). Subsequent delivery must be prevented until the dispenser indicating and recording elements have returned to their zero position.

The system is designed such that the discharge nozzle cannot be returned to its designed hanging position (that is, any position where the tip of the nozzle is placed in its designed receptacle and the lock can be inserted) until the starting lever is in its designed shut-off position and the zero-set-back interlock has been engaged.

Note: As a reminder, some dispensers have the shut-off mechanism in the form of a flap-actuated switch inside the nozzle receptacle.

On equipment with remote pumping systems, activate one dispenser (product). Check that other dispensers, which are supplied by the same pump, are interlocked so they will not operate without activating their individual starting mechanism.

<u>Power loss test</u>: Caution: See note below.

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 quantity, 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.

User information - The device memory shall retain information on the quantity of fuel dispensed and the sales price totals during power loss.

Note: Conformance to both of the above requirements is determined during type evaluation. Both requirements are difficult to check during routine inspections, and the inspector needs to be aware of the operational difficulties (business disruptions), which may be encountered if power is removed from equipment. Check your jurisdiction's policy before making field evaluations of power loss.

<u>Security seal and Audit Trails</u>: Apply appropriate security seals to the device(s) which pass your inspection(s). Data change audit trails are acceptable security seals for sealing certain electronic adjustable components. Note this information on the inspection report for future reference in case of complaint or fraud prevention.

Product flush: If you are testing a multi-product dispenser with a single hose and need to draw a sample for testing fuel quality (octane) during the quantity test, take the sample at the end of the normal test for each product. If you draw the sample before an accuracy test, flush a minimum of 0.3 gal of motor fuel from the dispenser before taking the octane sample. Return the flushed product to the storage tank containing the lowest octane fuel. NCWM action at the 74th Annual Meeting in 1989 addressed this item to be included in Publication 3 and the EPOs. It is not addressed in Handbook 44.

Use extreme caution when switch-loading product!

Note on your official report, the number of gallons of each product dispensed during test.

Evaluation

When you have completed testing, you can make a final assessment that the dispenser and all attached devices and mechanisms necessary for proper operation are in proper operating condition.

Review the volume test results to determine compliance with equipment maintenance and use of adjustments requirements. If you find the errors to be predominately in favor of the device user (owner), the devices are not being maintained in proper operating condition.

Whenever equipment is adjusted, the adjustments shall be made so as to bring performance errors as close to zero as practicable.

Concluding the Inspection

All fuel returned to storage and fill pipes covered.

Ensure all seals are in place, covers replaced.

All out of order tags, if any, are in place.

Discuss with the person in charge of the device any problems found during the inspection. Have them sign the completed paperwork.

Stow your equipment securely.

Isolate test equipment to avoid your exposure to hazardous fumes.

Leave site as you found it.

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Second version:

Weights and Measures Retail Motor Fuel Dispenser (RMFD) Curriculum

- State Administrative Issues
 - Completion of Administrative Forms
 - o Review of Rules
- History
- Roles in Society
- Need for Weights and Measures
- System of Weights and Measures
- Weights and Measures in United States and Your State
- Metrology
- State Laws
- Relationship to National and International Weights and Measures
- Associations
 - o Regional, State, Federal
- Federal Agencies

<u>NIST Handbook 44 – Specifications, Tolerances, and Other Technical Requirements for</u> <u>Weighing and Measuring Devices</u>

- Terminology
- NIST Handbook 44
- Fundamental Consideration
- Uncertainty
- Safety
- Support Equipment
- Seals
- Supports
- General Enforcement Guidelines

Measuring Devices

- Terminology
- Measuring Device Types
- Technology
- Suitability
- User Requirements
- Operation/Markings
- Tolerances for Liquid-Measuring Devices
- Basic Liquid-Measuring Device Test
- Basic Liquid-Measuring Device Inspection

Retail Motor-Fuel Dispensers

- Common Traits
- Examination Specifications
- Test Equipment
- Examination, Installation & Maintenance
- Test Specifications
- Evaluation
- Field/Practical Exercises

Appendix C

Curriculum for Class III and III L Scales EPO 13 and 13E

INTRODUCTION

The following information is intended for Weights and Measures Officials who are already familiar with:

- 1. Applicable Laws and Regulations
- 2. Established enforcement procedures and policies
- 3. Organization and use of NIST Handbook 44

This information is designed to establish a list of subject areas in which an inspector should be competent before working independent of supervision. The following may be expanded to include requirements for officials who already have entry-level skills and are ready for advanced training. Any training program or final exam could be based on any one or more of these subjects.

PREREQUISITES

1. Basic Components and Operations

Learning Outcome: Upon completion of this section the participant should be able to demonstrate an understanding of the basic components and operation of Class III and III L Scales. The participant should be able to describe the operation of and locate the following components:

Mechanical – Analog Indicating (Weighbeam and Dial)

- Weighbeam
- Fractional Beam
- Trig Loop
- Poise and Poise Stop
- Pawl
- Drop and Counterpoise Weights
- Dial
- Print Mechanism
- Graduations and Indications
- Balance Indicator
- Balance Adjustment
- Load Receiving Element
- Lever System and its Protection from the Facilitation of Fraud

Electronic Digital Indicating

- Indicating Element
- Motion Detection
- Automatic Zero Mechanism
- Recording / Printing Element
- Load Cells

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Components Common to Analog and Digital Scales

- Approaches
- Weigh Bridge
- Sections
- Marking Requirements
- Provision for Sealing

Resources Needed: Access to each type of device

Assessment Method: Practical work and observation by trainer.

2. Basic Definitions

Learning Outcome: Upon completion of this section, the participant should have a good understanding of the following terms:

- Absolute value
- Approval seal
- Audit trail
- Automatic zero-setting mechanism
- Axle-load scale
- Balance indicator
- Balancing mechanism
- Beam scale
- Clear interval between graduations
- Concentrated load capacity (CLC)
- Configuration parameter
- Counterbalance weight
- Counterpoise weight
- d, value scale division
- Decreasing-load test
- e, value of verification scale division
- e_{min} (minimum verification scale division
- Event counter
- Event logger
- Fractional bar
- Graduation interval
- Graduation
- Increasing-load test
- Indicating element
- Initial zero-setting mechanism
- Interval, clear, between graduations
- Load receiving element
- Load cell
- Load cell verification interval (v)
- Main-weighbeam elements
- Main bar
- Main graduation
- Manual zero-setting mechanism
- Manufactured device
- Maximum capacity

- Metrological integrity (of a device)
- Minimum capacity
- Minimum totalized load
- Minimum tolerances
- Minimum clear load
- Multi-interval scale
- Multi-revolution scale
- Multiple of a scale
- Nominal capacity
- Nominal
- Nose-iron
- Official with statuary authority
- Poise
- Radio frequency interference (RFI)
- Retroactive
- Scale division, number of (n)
- Scale section
- Section test
- Security means
- Security seal
- Semi-automatic zero-setting mechanism
- Sensitivity requirement (SR)
- Shift test
- Span
- Specification
- Strain-load test
- Tolerance
- Vehicle scale
- Verification scale division, value of (e)
- V min (minimum load cell verification interval)
- Weighbeam
- Weighing element
- Weighment
- Zero-load balance
- Zero-load balance, automatic-indicating scale
- Zero-load balance, nonautomatic-indicating scale
- Zero-load balance for a recording scale
- Zero-setting mechanism

Resources Needed: NIST HB 44, visual aides/actual devices

Assessment Method: Written exercises, oral questions and discussion

3. Professionalism

Learning Outcome: Upon completion of this section, the participant should know the expected conduct while performing their duties:

- Appropriate dress
- Appropriate credentials
- Appropriate approach to owner/manager
- Dealing with emotional, aggressive or confrontational individuals

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Resources Needed: Visual aides, role play

Assessment Method: Discussion, oral question and answer

PRE-TEST DETERMINATIONS

1. Type Approval (NTEP CC)

Learning Outcome: Upon completion of this section, the participant should know the procedure to determine the NTEP status of a device and how to obtain a CC for a particular device.

- Locate CC number on device
- Verify CC number with list of NTEP devices

Resources Needed: Computer with access to NTEP website, List/database of NTEP approved devices.

Assessment Method: Written exercises

2. Application of Maintenance or Acceptance Tolerance

Learning Outcome: Upon completion of this section, the participant should be able to identify which tolerance to apply to the device in various situations

- Recently installed devices
- Devices ordered repaired
- Devices moved from other locales
- Routine test

Resources Needed: NIST HB 44

Assessment Method: Written exercises, oral questions and discussion

3. Equipment Required

Learning Outcome: Upon completion of this section, the participant should be able to identify what equipment is needed prior to arrival at test site. The participant should also be able to assess the need for special equipment and/or assistance.

- Test weights
- Safety equipment (Hard hat, glasses, steel toe boots, etc.)
- Hand tools
- Security seals and inspection stickers
- Security clearance

Resources Needed: Actual equipment

Assessment Method: Oral questions and discussion

INSPECTION

1. Suitability

Learning Outcome: Upon completion of this section, the participant should be able to take into account variables such as commodity cost, average net load, frequency of application, environmental conditions, etc.

Resources Needed: Practical examples

Assessment Method: Oral questions and discussion

2. Location/Support

Learning Outcome: Upon completion of this section, the participant should be able to evaluate factors that could influence the performance of a device.

- Lay of the land
- Proximity to scale house
- Approaches
- Security

Resources Needed: Practical examples

Assessment Method: Field observation

3. Primary Indications and Functions

Learning Outcome: Upon completion of this section, the participant should be able to evaluate value of division units, capacity indication, etc.

Resources Needed: Pictorial representations or actual devices

Assessment Method: Written exercises or field observation

4. Maintenance/Level Condition

Learning Outcome: Upon completion of this section, the participant should know the owner's responsibilities.

- Cleanliness
- Maintaining approaches
- User requirements

Resources Needed: Access to actual device(s)

Assessment Method: Practical observation

5. Marking Requirements

Learning Outcome: Upon completion of this section, the participant should be able to determine compliance with marking requirements provided in NIST Handbook 44.

- Weighing element
- Indicator
- Load cell

PDC 2007 Interim Agenda Appendix C – Curriculum for Class III and III L Scales EPO 13 and 13E

Resources Needed: NIST HB 44

Assessment Method: Written exercises or field observation

TESTING

Learning Outcome: Upon completion of this section, the participant should be able to competently perform the following tests:

- Increasing load test
- Test points (State Policy)
- Decreasing load test
- Shift test
- Special Tests
- Sensitivity
- Over Capacity
- RFI
- Strain load test
- Zero load test

Resources Needed: Test equipment, actual devices

Assessment Method: Practical observation, written exercises

POST-TEST PROCEDURES

1. Completing the Test Report

Learning Outcome: Upon completion of this section, the participant should be able to accurately and completely fill out the test report.

- Computer knowledge
- Legible handwriting

Resources Needed: Actual test report, computer

Assessment Method: Practical observation, written exercises

2. Sealing

Learning Outcome: Upon completion of this section, the participant should know the appropriate sealing policies.

- Locate provision for sealing
- What to do if no provision is found

Resources Needed: Sealing equipment, actual device

Assessment Method: Practical observation

3. Official Actions

Learning Outcome: Upon completion of this section, the participant should know which of the following actions to use at the completion of the test.

- Approval
- Repair Order
- Stop Use
- Condemnation

Resources Needed: Official action notices

Assessment Method: Written exercises

PDC 2007 Interim Agenda Appendix C – Curriculum for Class III and III L Scales EPO 13 and 13E

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National Type Evaluation Program (NTEP) Committee Interim Agenda

Don L. Onwiler, Chairman Program Manager Nebraska Department of Weights & Measures

500 INTRODUCTION

The NTEP Committee will address the following items at its 2007 Interim Meeting. Except when posted, all meetings are open to the membership. The members will be invited to dialogue with the NTEP Committee on issues that the NTEP Committee has on its agenda. The NTEP Committee is currently working on the following issues:

Table A Index to Reference Key Items		
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С	NTETC Draft Measuring Sector Meeting Summary*	
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*Drafts of the sector summaries can be viewed at - http://www.ncwm.net/ntep/index.cfm?fuseaction=news

BIML	Bureau of International Legal Metrology	IR	International Recommendation
CD	Committee Draft ¹	MAA	Mutual Acceptance Arrangement
CIML	International Committee of Legal Metrology	OIML	International Organization of Legal
			Metrology
CPR	Committee on Participation Review	PTB	Physikalisch-Technischen Bundsanstalt
DD	Draft Document ²	R	Recommendation
DR	Draft Recommendation ²	SC	Subcommittee
DV	Draft Vocabulary ²	TC	Technical Committee
DoMC	Declarations of Mutual Confidence	WD	Working Document ³

Table C Glossary of Acronyms*

 1 CD: a draft at the stage of development within a technical committee or subcommittee; in this document, successive drafts are numbered 1 CD, 2 CD, etc.

² DD and DR: draft documents approved at the level of the technical committee or subcommittee concerned and sent to BIML for approval by CIML.

³ WD: precedes the development of a CD; in this document, successive drafts are number 1 WD, 2 WD, etc.

* Explanation of acronyms provided by OIML.

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

1. Test Data Exchange Agreements

Background/Discussion: This item was included on the Committee's agenda in 1998 to provide an update on NTEP's work to establish bilateral and multilateral agreements. Under such agreements and arrangements, manufacturers would be able to submit their equipment to any of the participating countries for testing to OIML-recommended requirements. The resulting test data would be accepted by other participants as a basis for issuing each country's own type approval certificate. Following is a report on the three types of test data exchange agreements:

Mutual Acceptance Arrangement (MAA):

The MAA is also in the NCWM Board of Directors Committee Report.

Background: During the 2006 NCWM Interim Meeting, the full NCWM Board carefully considered this issue and the recommendation of the NTEP Committee. Significant discussion was held on this issue with the primary focus on the desire to become a utilizing member (Country B) for the DoMC that will cover OIML R 60 load cells. Significant comments also came from the full membership during the 2006 NCWM Interim Meeting open hearings on this issue. In addition, a very large group attended a late evening meeting on this topic. The participants in this meeting asked many important questions and demonstrated a high level of interest in NCWM's direction regarding MAAs. The NTEP Committee would like to acknowledge and thank this group of participants for their significant contributions in discussing this issue.

The decision of the Board was to accept the recommendation of the NTEP Committee and indicate the intention of signing on as a utilizing member of the DoMC for OIML R 60 Load Cells. The NCWM Board indicated no interest at this time in being a utilizing participant for OIML R 76 "Non-automatic weighing instruments (NAWI)." The intent is to investigate various alternatives and determine if a laboratory can be established that will allow NCWM to be an issuing participant in the DoMC for OIML R 76. It was clearly stated that this laboratory would have to be "viable" and that NCWM must fully understand the effect such a signing may have on NTEP, existing NTEP labs, and our standards development process in NCWM. It was also stated that it is not clear at this time if funding for such a laboratory is available.

The DoMC for OIML R 60 was signed by NCWM Chairman Don Onwiler at the 2006 NCWM Annual Meeting.

Current Comment: OIML met in October 2006 and approved the MAA for R 60 and R 76. NCWM and NTEP look forward to the opportunity to work with our international partners in the DoMC for OIM R 60.

Bilateral Agreements: No additional discussions have been held on this topic, pending the outcome of the MAA discussions.

NTEP-Canada Mutual Recognition Program: No additional areas of MRA activities have been identified.

2. NTEP Participating Laboratories and Evaluations Reports

At the 2006 NCWM Annual meeting, Stephen Patoray, NTEP Director, updated the Committee on NTEP laboratory and administrative activities since October 1, 2005.

The NTEP weighing and measuring laboratories held a joint meeting in April 2006 in Annapolis, Maryland. The NTEP weighing laboratories also met in September 2006 before the meeting of the Weighing Sector in Annapolis. The NTEP measuring laboratories also met in October 2006 prior to the Measuring Sector meeting in Annapolis.

During the 2006 NCWM Annual Meeting, the NTEP Director, Steve Patoray, reported that the number of authorized NTEP labs has not changed within the last year. He also indicated that the NTEP Committee and he are watching the

backlog at the NTEP laboratories closely. At the present time, the backlog at the NTEP laboratories continues at near historical levels, after a period of several months at a much higher level.

Current Comment: Steve Patoray will update the Committee on any outstanding issues related to the NTEP participating labs.

Upcoming meetings:

NTEP Laboratory Meeting – May 2007, Sacramento, California Software Sector – (TENTATIVE DATE) May 2007, Sacramento, California Grain Analyzer Sector – August 2007, Kansas City, Missouri Weighing Sector – September 2007, Sacramento, California Measuring Sector – October 2007, Little Rock, Arkansas

3. NTETC Sector Reports

Background:

Grain Moisture Meter and NIR Protein Analyzer Sectors: The NTETC Grain Moisture Meter and NIR Protein Analyzer Sectors held a joint meeting in Kansas City, Missouri, on August 23 – 24, 2006. A draft of the final summary will be provided to the Committee for review and approval prior to the 2007 NCWM Interim Meeting.

The next meeting of the Grain Moisture Meter and NIR Protein Analyzer Sectors is scheduled for August 2007 in Kansas City, Missouri. For questions on the current status of Sector work or to propose items for a future meeting, please contact the sector technical advisors:

Diane Lee	Jack Barber
NIST WMD	J.B. Associates
100 Bureau Drive – Stop 2600	10349 Old Indian Trail
Gaithersburg, MD 20899-2600	Glenarm, IL 62536
Phone: (301) 975-4405	Phone: (217) 483-4232
Fax: (301) 975-8091	
e-mail: diane.lee@nist.gov	e-mail: jbarber@motion.net

Measuring Sector: The NTETC Measuring Sector met October 20 - 21, 2006, in Annapolis, Maryland. A draft of the final summary will be provided to the NTEP Committee for review and approval prior to the 2007 NCWM Interim Meeting.

The next meeting of the Measuring Sector is scheduled for October 2007 in Little Rock, Arkansas, in conjunction with the Southern Weights and Measures Association's Annual Meeting. For questions on the current status of sector work or to propose items for a future meeting, please contact the sector technical advisor:

Richard Suiter
NIST WMD
100 Bureau Drive – Stop 2600
Gaithersburg, MD 20899-2600

Phone: (301) 975-4406 Fax: (301) 975-8091 e-mail: rsuiter@nist.gov

Weighing Sector: The NTETC Weighing Sector met September 26 - 28, 2006, in Annapolis, Maryland. A final draft of the meeting summary will be provided to the NTEP Committee for review and approval prior to the 2007 NCWM Interim Meeting.

The next Weighing Sector meeting is scheduled for September 2007 in Sacramento, California. For questions regarding the current status of sector work or to propose items for a future meeting, please contact the sector technical advisor:
Steven Cook	Phone: (301) 975-4003
NIST WMD	Fax: (301) 975-8091
100 Bureau Drive – Stop 2600	e-mail: stevenc@nist.gov
Gaithersburg, MD 20899-2600	-

Steve Patoray reported that the previous year's sector reports could be found on the NCWM website. He also reported that, if contacted, he can supply anyone interested with all previous sector reports.

Current Comment: The Committee will hear an update on the activities of the National Type Evaluation Technical Committee (NTETC) Sectors at the 2007 NCWM Interim Meeting.

4. NTEP Participation in U.S. National Work Group on Harmonization of NIST Handbook 44, NCWM Publication 14 and OIML R 76 and R 60

Background: The Secretariat for OIML TC 9/SC 1 recently submitted the 2 CD of OIML R 76-1 "Non-automatic Weighing Instruments" to the participating members of TC 9/SC 1 for review, comment, and vote. The 2 CD was developed based on an analysis of the 1992 edition OIML R 76, answers from OIML TC 9/SC 1 members to a questionnaire distributed in May 2002, and comments on the December 2003 WD for R 76. The 2 CD includes the changes to the December 2003 WD and the December 2004 1 CD based upon comments and recommendations of the U.S. National Work Group (USNWG) and other countries on R 76.

The United States submitted 27 recommendations and requests for clarifications to the secretariat of TC 9/SC 1 on the 1 CD and opposed the 1 CD being elevated to a Draft Recommendation. Eighteen of the U.S. recommendations and requests for clarification were accepted by the secretariat, four recommendations resulted in alternate language proposed by the secretariat, and five recommendations were not accepted by the secretariat. The Secretariat provided the United States with a reason why the remaining comments were not accepted.

The secretariat has already registered the 2 CD of R 76-1 as a DR in order not to prolong the revision process at the technical committee level provided that the 2 CD receives approval.

NIST WMD asked the USNWG for R 76 and other interested individuals, organizations, and associations to review the 2 CD and submit any comments, along with recommended language and technical justifications to NIST WMD. During the 2006 NCWM Interim Meeting, Steven Cook, NIST WMD, provided the committee with an update to the revision of R 76 and indicated that the United States will vote in favor of the 2 CD.

Although this current review of R 76 will likely be completed shortly, OIML has indicated a willingness to revisit the Recommendation and to consider including a large-capacity class similar to the current Handbook 44 Class IIIL and the Canadian Class III HD at some point in the future. WMD will be working with its Canadian counterparts to develop a North American Heavy-Duty Device Class.

Current Comment: At its October 2006 meeting in Cape Town, South Africa, the 41st CIML approved DR 7: R 76-1 Non-automatic weighing instruments, Part 1: Metrological and technical requirements – Tests. The DoMC for R 76 will need to be updated to reflect the changes included in the new revision of R 76. Further updates on the current status of this project will be provided by Steve Cook.

5. Software Sector

Background: The first meeting of the Software Sector was April 5, 6, and 7, 2006, in Annapolis, Maryland.

At this time the recommended scope of the Software Sector is to:

• Develop a clear understanding of the use of software in today's weighing and measuring instruments.

- Develop NIST Handbook 44 specifications and requirements, as needed, for software incorporated into weighing and measuring devices. This may include tools for field verification, security requirements, identification, etc.
- Develop NCWM Publication 14 checklist criteria, as needed, for the evaluation of software incorporated into weighing and measuring devices, including marking, security, metrologically significant functions, etc.
- Assist in the development of training guidelines for weights and measures officials in verifying software as compliant to applicable requirements and traceable to an NTEP Certificate. Educational material for manufacturers, designers, service technicians, and end users may also be considered.

SOFTWARE SECTOR Meeting Summary Annapolis, Maryland April 5, 6, and 7, 2006

Note: Underlined "D-SW" sections refer to International Document (OIML D-SW) "General Requirements for Software Controlled Measuring Instruments."

Action items:

- 1. Software identification (model/version, help screen, etc.)
 - a. Built for Purpose
 - b. Not Built for Purpose
 - c. Version number or greater
- 2. Software protection/security <u>D-SW 5.1.3</u>
 - a. Identification of unapproved/unauthorized software
- 3. Storage of data, <u>D-SW5.2.3</u> and subsections, automatic storing and transmission
- 4. Software maintenance and reconfiguration <u>D-SW5.2.6</u>
- 5. <u>D-SW Section 7</u>. verification in the field—needs work
- 6. Mfg. documentation to be submitted, change to the NTEP application <u>D-SW 6.1.1</u>
- 7. Definitions of Software-based Device, etc.

The group agreed that Jim Truex should continue on as Software Sector chairman. Mr. Truex asked Steve Patoray to continue on as technical advisor to the Software Sector. It was requested that NIST consider the role of technical advisor in the future as they currently do with other sectors.

Current Comment: The Software Sector met for a second time on October 18 - 19, 2006, in Annapolis, Maryland. Much discussion was held on the above action items. It was clear that additional work is needed to find consensus on these various items. Additional meetings are needed to complete the work of this Sector. There will be a request to the NCWM Board for additional funding for future meetings.

6. Conformity Assessment Program

Background: At the fall 2006 NTEP Committee Meeting, the Committee discussed the current status of this project. The following items were noted:

Certificate Review: The question is how this would be accomplished given the limited resources of NCWM. It was suggested that this item may need to continue on a "back burner" until resources can be clearly identified before proceeding with the project in an efficient, thorough, and accurate manner.

Initial Verification: This part of the project is moving forward. The work group chairman, Lou Straub, has received data from several states on small capacity price computing scales. The work group is currently finalizing a checklist for retail motor-fuel dispensers and vehicle scales.

Verified Conformity Assessment Program (VCAP): The work group chairman provided the NCWM Board with a final version of the work group report at the 2006 NCWM Annual Meeting. This report will form the basis of the technical policy. Additional work will be needed. At the 2006 NCWM Fall Board Meeting, additional discussion was held on this item, and a small work group will be formed to define the remaining elements of this program.

Current Comment: Steve Patoray will update the NTEP Committee and the NCWM Board regarding the current status of this item.

7. NTEP Certification of Residential Type Water and Vapor Meters

Background: A request came in from one state for NTEP to conduct evaluations and certify residential-type water meters and vapor meters. The main usage of such a device is in sub-metering. A discussion was held on this item at the Measuring Sector meeting in October 2006. There was insufficient representation from the manufacturers of this type of device to come to consensus on this item; however, two work groups were formed consisting of interested parties regarding these device types. The sector chairman, Mike Keilty, will draft a letter to be sent to device manufacturers of this device type with a request for comments, recommendations, and additional information on sub-metering standards and policies from other agencies and municipalities.

Current Comment: Steve Patoray and Dick Suiter will update the NTEP Committee on any additional progress on this item. Any additional comments from NCWM members would be appreciated.

New Item

8. Use of NTEP Logo

Background: The NTEP logo is a registered trademark of NCWM. NCWM Publication 14 Administrative Policy provides some parameters on the appropriate use of the logo. Over the past several months, NTEP has been attempting to resolve an issue of misuse of the NTEP logo. During this time, the NTEP Committee and the NCWM Board have discussed developing a systematic method of addressing misuse of the NTEP logo in the future. A work group was formed during the 2006 Annual Meeting with the charge to develop draft form letters that could be used by NTEP to inform anyone believed to be misusing the NTEP logo. Additionally, NCWM staff was directed by the Board to obtain advice from legal counsel as to the appropriate methods of deterring misuse of the logo. Legal counsel recommended that a license agreement be implemented between NCWM and anyone wishing to use the NTEP logo. This agreement would provide allowances and limitations on the use of the logo. The license agreement, along with form letters drawn up by legal counsel, was submitted to the NCWM Board for discussion. The Board has recognized that this change in policy relating to the use of the NTEP logo is significant. Therefore, the NTEP Committee is presenting the proposed license agreement for review and requesting comments from NCWM membership during the 2007 Interim Meeting. A DRAFT copy of the license agreement can be found in Appendix A.

Don Onwiler, Nebraska, NTEP Committee Chair

Mike Cleary, California, NCWM Chair Judy Cardin, Wisconsin, NCWM Chair-Elect Charles Carroll, Massachusetts Randy Jennings, Tennessee

NTEP Technical Advisor: S. Cook, WMD NTEP Technical Advisor: S. Patoray, NTEP Director

National Type Evaluation Program Committee

NTEP Committee 2007 Interim Agenda

Appendix A

NTEP Certification Mark License

PFAU ENGLUND NONPROFIT LAW, P.C.

3213 Driftwood Drive, #622 • Alexandria, VA 22314 Phone: 703/304-1204 • Fax: 252/336-4821 Internet: SPFAU@NONPROFITLAW.COM ADMITTED IN VA AND DC

EMAIL MEMORANDUM

- To: Stephen Patoray, NCWM
- FROM: Sandra Pfau Englund

RE: Recommended revisions to NTEP policies

DATE: August 24, 2006

You asked that I review and provide recommendations on how to strengthen compliance with NCWM's administrative policies regarding use of the NTEP certification mark. Following are my recommendations for revisions to the NCWM administrative policies. I previously provided and recommended NCWM use a certification license to regulate use of the mark. Attached are draft letters that may be used to transmit and request execution of the recommended certification mark license.

Let me know if you have questions or if I can assist further with this matter.

Recommended modifications to NCWM Administrative Policies

- A. Section N.5 Withdrawn Status -- add to the *Reasons for Withdraw*(4) Use of the NTEP certification mark without a license from NCWM;
 (5) Misuse of the NTEP certification mark.
- B. Section N.7 Reactivitation of Certificates of Conformance revise paragraph "a" to state,
 a. An application for reactivation.... This will require an application, processing fee and
 evidence that the applicant is in full compliance with all NCWM administrative policies.
- C. Section U.2 Permissible Use of Statements and NTEP Logo revise paragraph "b" to state,

b. The NTEP statement or logo shall only be used by person(s) or organization(s) that have been granted a license by NCWM to use the statements and logo. All holders of Certificates of Conformance and companies that distribute goods that include certified devices may apply for a license. The license is provided without fee or royalty. All licensees must use the statements and logo only in conjunction with products that have been certified in accordance with this publication and NIST Handbook 44. The statement or logo shall never be used in any manner that could suggest or imply that certification extends to a product that is not NTEP certified. When reference is made to the NTEP logo or an NTEP CC; it is essential to clearly identify which products are NTEP certified if a copy also includes products that are not certified. References to NTEP must always be located in close proximity to any references to a certified product when non-certified products are shown on the same page.

NCWM, in its sole discretion, determines whether its certified mark and statements are properly used in conformance with the license agreement and these policies.

D. Section T. Appeal and Review Process – revise the first bullet under T.1 by deleting the initial phrase, "At any stage in the evaluation process". Add a fourth bullet that states, "A licensee may appeal withdrawal of the NTEP Certification Mark License Agreement"

Revise the last sentence of section T.2 (e) to state,

"A copy of the Director's decision shall be delivered or mailed to the appellant, the Committee Chair, and (if appropriate) the laboratory."

National Conference on Weights and Measures (NCWM) NTEP Certification Mark License Agreement

This License Agreement ("License") is entered into by and between the National Conference on Weights and Measures, Inc., a Virginia nonprofit, tax-exempt corporation with its principal office located at 15245 Shady Grove Road, Suite 130, Rockville, Maryland 20850 (known in this License as "NCWM"), and

Company name:	
Company address:	
Contact name:	Contact phone:
Contact email:	
known in this License as the "Licensee".	

Background

The NTEP (National Type Evaluation Program) name and logo (the "Certification Mark") is a Certification Mark registered with the United States Patent and Trademark Office and owned by the National Conference on Weights and Measures ("NCWM"). As the owner of the Certification Mark, NCWM has the exclusive right to authorize the parties that may use the Certification Mark and how the Certification Mark may be used. NCWM also is required to prevent the misuse of the Certification Mark.

Generally NCWM authorizes holders of Certificates of Conformance, and third party purchasers of certified devices, to use the Certification Mark provided such parties enter into a Certification Mark licensing agreement with NCWM and agree to use the Certification Mark in conformance with NCWM's policies.

WHEREAS, NCWM is the owner of the trademark shown in Exhibit A and referred to as the "Certification Mark" in this agreement, which Certification Mark is registered with the United States Patent and Trademark Office (Registration No. 2397670) and is used to certify that an apparatus has been found through the National Type Evaluation Program to conform to the design requirements and be capable of meeting the performance requirements for goods of the particular type as set forth in *Handbook 44, Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices*, of the National Institute of Standards and Technology; and,

WHEREAS, Licensee desires to obtain a license to use the Certification Mark with respect to the distribution or sale of a certified device;

NOW THEREFORE, the parties agree as follows:

AGREEMENT

1. **License grant**. Provided Licensee complies with all the terms, conditions and policies relating to the use of the Certification Mark, NCWM grants Licensee a limited, non-exclusive, world-wide, revocable, non-transferable royalty-free license to use the Certification Mark on or in connection with a certified device.

- 2. **Reservation of rights**. Except for the limited license rights granted in this agreement, NCWM reserves to itself all right, title and interest in and to the Certification Mark.
- 3. License requirements and limitations. The license granted in section 1 is granted subject to the following requirements and limitations:
 - a. Compliance with the NCWM National Type Evaluation Program Administrative Policy, Publication 14 ("Publication 14"). Licensee shall comply with all requirements in Publication 14, as currently existing or later revised. Licensee is solely responsible for keeping itself informed of the current requirements in Publication 14 by reviewing from time to time the version posted on the NCWM website. NCWM is under no obligation to inform Licensee of changes to Publication 14 other than by posting the revised version on its website. If Licensee does not agree with any changes to Publication 14, Licensee's sole remedy is to terminate this Agreement as provided herein. If the provisions of Publication 14 and this License conflict, the terms of this License shall control.
 - b. Certification Mark used with certified devices only. Licensee shall only use the Certification Mark in conjunction with devices that have been certified in accordance with Publication 14 and NIST Handbook 44, and that hold an active NTEP Certificate of Conformance. It is essential that when a device is included as part of a product that it be clear that only the device, and not the entire product, is certified. When a certified product is shown on the same page with a non-certified product, the Certification Mark must be located in close proximity to the certified product. Licensee understands and agrees that NCWM shall determine, in its sole discretion, if use of the Certification Mark is inappropriate or unclear, and Licensee agrees to revise the use or placement of the Certification Mark, or remove the Certification Mark, as directed by NCWM.
 - c. Advertising Statements. Licensee understands and agrees that all statements used in conjunction with the Certification Mark must comply with Appendix C of Publication 14. Licensee understands and agrees that NCWM shall determine, in its sole discretion, if the statements used comply with NCWM's policies, and Licensee agrees to revise or remove statements that NCWM determines do not comply with its policy.
 - d. **Certification Mark may not be modified**. Licensee shall not modify, enhance or change the Certification Mark or combine it with another mark, or use, adopt or register any marks confusingly similar to the Certification Mark.
 - e. **Certification Mark may not be used:** (i) in any manner that is likely to reduce, diminish or damage the goodwill, value or reputation associated with the Certification Mark; (ii) in any manner as would violate the rights of any third parties; (iii) in any manner as would result in any third party claim or any governmental investigation, claim or proceeding alleging unlawful or improper use of the Certification Mark; (iv) on or in connection with any products or services other than the certified devices and promotional materials pertaining to the certified devices; or (v) in any manner other than as a certification mark.
 - f. **Inspection**. Licensee will, upon NCWM's request and at no cost to NCWM, provide NCWM with samples of all uses of the Certification Mark by Licensee.
 - g. **Withdrawn Certification**. If at any time the NTEP Certificate of Conformance is withdrawn from a device, Licensee will immediately cease all use of the Certification

Mark. Licensee also will notify all distributors and customers who may have or promote formerly certified devices that the NTEP Certificate of Conformance has been withdrawn and the use of the Certification Mark must cease immediately.

- h. **Noncompliance**. Licensee shall immediately and at its sole costs and expense correct any usage of the Certification Mark that NCWM regards as failing to comply with the requirements of this Agreement or Publication 14.
- i. **Third-Party Infringement**. Licensee will promptly notify NCWM if it becomes aware of any infringement of the Certification Mark by a third party. Licensee shall have neither the right nor the obligation to prosecute any infringement claims against third-party infringers.
- j. Use of NCWM. Nothing in this Agreement gives Licensee the right or license to use the marks "National Conference of Weights and Measures" or "NCWM" apart from the Certification Mark as shown in Exhibit A.
- k. Unauthorized Use. Licensee acknowledges that if it engages in any unauthorized use or reference to the Certification Mark, its right to continue using the Certification Mark may be terminated and that irreparable injury will occur if such unauthorized use continues.
- 4. License fees and royalties. This license is granted fully paid and without royalty.
- 5. NCWM ownership of Certification Mark. Licensee acknowledges the National Conference of Weights and Measures exclusive right, title and interest in and to the Certification Mark and acknowledges that nothing in this Agreement shall be construed to provide to Licensee any rights in the Certification Mark except as expressly provided in the Agreement. Licensee acknowledges that its use of the Certification Mark will not create in it any right, title or interest in the Certification Mark other than the limited license rights granted to Licensee in this Agreement and that all such use of the Certification Mark and the goodwill generated thereby will inure to the benefit of the NCWM. Licensee warrants and represents that: (a) it will not at any time challenge the NCWM's right, title or interest in the Certification Mark or the validity of the Certification Mark or any registration of the Certification Mark; (b) it will not do or cause to be done or omit to do anything, the doing, causing, or omitting of which would contest or in any way impair or tend to impair the rights of the NCWM in the Certification Mark; (c) it will not represent that it has any ownership in or rights with respect to the Certification Mark; and (d) it will not, either during or subsequent to the term of this Agreement, adopt, use or register any certification mark, trademark, service mark, trade name, insignia or logo that is confusingly similar to or a colorable imitation of the Certification Mark or any of the NCWM's other marks.

6. **Representations of Licensee**. Licensee represents and warrants that:

- a. It is duly organized and in good standing under the laws of its jurisdiction of organization;
- b. Licensee has taken all actions that are necessary or advisable in order for it to enter into this Agreement;
- c. The person executing this Agreement on behalf of Licensee is authorized to do so;
- d. The Agreement, upon its execution by Licensee (and assuming due execution by NCWM) shall be the binding obligation of Licensee, enforceable in accordance with its terms;
- e. Licensee will comply with all changes to Publication 14 within one (1) month from the date such changes are made;

- f. Licensee will not challenge NCWM's rights under its National Type Evaluation Program, Publication 14, or this Agreement and will not challenge the validity of any NCWM mark.
- 7. No warranty by the NCWM. The NCWM provides the license granted in this Agreement without warranty of any kind. TO THE MAXIMUM EXENT PERMITTED BY LAW, THE NCWM DISCLAIMS ALL EXPRESS, IMPLIED AND STATUTORY WARRANTIES.
- 8. Limitation of Liability. IN NO EVENT SHALL NCWM BE LIABLE FOR LOST PROFITS OR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THIS AGREEMENT REGARDLESS OF THE LEGAL THEORY UPON WHICH SUCH CLAIM IS BASED AND EVEN IF THE NCWM HAS BEEN ADVISED OF THE POSSIBILITY THEREOF.
- 9. **Indemnity**. Licensee agrees to defend, indemnify and hold NCWM and its respective representatives, employees, officers, directors and agents harmless against all claims, suits, cost, damages, judgments, attorney's fees, settlements or expenses incurred, caused by, arising from or relating to any breach of this Agreement by Licensee or claimed, obtained or sustained by any third party, whether for personal injury, misrepresentation, or otherwise arising out of or relating to the manufacture, advertising, promotion, use, marketing or sale of the certified devices, provided such claims are not caused by NCWM's negligence or breach of this Agreement.

10. Effective date, term and termination.

- a. **Effective date**. This Agreement shall commence and the license granted under the Agreement shall become effective (the "Effective Date") upon the execution of this agreement by both parties.
- b. **Term**. The term of this Agreement shall commence on the Effective Date and shall continue until terminated by a party as provided in this Agreement.
- c. Termination.
 - i. **Termination by Licensee**. Licensee may terminate this Agreement at any time by providing written notice to NCWM and by discontinuing all use of the Certification Mark. Termination in this manner shall be effective upon receipt of the written notice by NCWM or at such time (not to exceed thirty days after the date notice is received) specified in the notice from Licensee.
 - ii. Termination by NCWM. NCWM may terminate this Agreement upon thirty (30) days notice if Licensee breaches any provision of this Agreement and fails to cure such breach within such thirty (30)-day period. NCWM also may terminate this Agreement upon thirty (30)-days notice if it discontinues use of the Certification Mark or modifies the design of the Certification Mark.
 - iii. **Consequences of termination**. Upon termination of this Agreement, the license granted shall immediately terminate. Licensee will immediately discontinue all use of the Certification Mark and shall destroy all materials in their possession containing the Certification Mark and shall certify to the destruction of such materials if the NCWM requests that they do so.
- 11. **Compliance with laws.** Licensee will at all times comply with all laws, regulations, ordinances, rules and orders that are applicable to it in connection with its manufacture and sale of NTEP certified devices and the operation of its business generally.

12. Miscellaneous.

- a. **Governing Law**. This Agreement will be governed by and construed in accordance with the laws of the State of Maryland as applied to agreements entered into and fully performed therein by residents thereof. Both parties submit to jurisdiction in Maryland and further agree that any cause of action arising under this Agreement shall be brought in a court in the County of Montgomery, Maryland.
- b. **Severability; Headings**. If any provision within this Agreement is held to be invalid or unenforceable for any reason, the remaining provisions will continue in full force without being impaired or invalidated in any way. Headings are for reference purposes only and in no way define, limit, construe or describe the scope or extent of such section.
- c. **Independent contractors**. The parties are independent contractors, and no agency, partnership, joint venture, employee-employer or franchisor-franchisee relationship is intended or created by this Agreement. Neither party shall make any warranties or representations on behalf of the other party.
- d. Notice. NCWM may give notice to Licensee by personal delivery, mail, courier, facsimile or email to Licensee's address as identified in this Agreement. Licensee may give notice to NCWM by personal delivery, mail, courier, or facsimile to NCWM's physical address as identified at www.ncwm.net or electronically by email to ncwm@mgmtsol.com. Notice shall be deemed given: upon personal delivery; if sent by fax, with confirmation of correct transmission, on the next business day after it was sent; upon the courier's confirmed delivery if sent by courier; and if sent by mail with proper postage prepaid, five (5) days after the date of mailing. Notices by email shall be deemed given by the end of the business day on which they are sent.
- e. Entire agreement; Waiver. This Agreement sets forth the entire understanding and agreement of the parties and supersedes any and all oral or written agreements or understandings between the parties as to the subject matter of this Agreement. This Agreement may be changed only by a writing executed by both parties that expressly states that it is changing the provisions of this Agreement. The waiver of a breach of any provision of this Agreement will not operate or be interpreted as a waiver of any other or subsequent breach.
- f. **Assignment**. Licensee may not transfer its rights or obligations under this Agreement in whole or in part to any third party without the prior written consent of NCWM and any attempt to do so is void.
- g. **Counterparts**. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same instrument.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives.

For LICENSEE: For NCWM:

Signature:	Signature:
Name:	Name:
Title:	Title:
Date:	Date:

Exhibit A

Certification Mark



Appendix B

NTETC Draft Grain Analyzer Sector Meeting Summary

This report can be viewed on the National Conference of Weights and Measures website at: http://www.ncwm.net/ntep/index.cfm?fuseaction=news

NTEP Committee 2007 Interim Agenda Appendix B – NTETC Draft Grain Analyzer Sector Meeting Summary

Appendix C

NTETC Draft Measuring Sector Meeting Summary

This report can be viewed on the National Conference of Weights and Measures website at: http://www.ncwm.net/ntep/index.cfm?fuseaction=news

NTEP 2007 Interim Agenda Appendix C – NTETC Draft Measuring Sector Meeting Summary

Appendix D

NTETC Draft Weighing Sector Meeting Summary

This report can be viewed on the National Conference of Weights and Measures website at: http://www.ncwm.net/ntep/index.cfm?fuseaction=news

NTEP 2007 Interim Agenda Appendix D – NTETC Draft Weighing Sector Meeting Summary