



NCWM - NEWS

National Conference on Weights and Measures

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NCWM Headquarters

1135 M Street, Suite 110 / Lincoln, Nebraska 68508

P. 402.434.4880

F. 402.434.4878

E. info@ncwm.net

W. www.ncwm.net

Don Onwiler Executive Director

Jim Truex NTEP Administrator

Darrell Flocken NTEP Specialist

Elisa Stritt Office Manager

Tyler Reeder Project Coordinator

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Chairman's Column

Ronald Hayes, NCWM Chair — Missouri Department of Agriculture



Dear Friends,

I have been fortunate to be part of NCWM for more than 30 years, but I have to say these last two years have been the most fulfilling of my career. It has been great to meet many of the local weights and measures jurisdictions throughout the country and share this knowledge with both my state and regional associations. Thank you for your hospitality and generously sharing your knowledge and ideas.

Three goals were selected for the conference this year, so I thought for my last column I would share a progress report on those goals.

The first goal was to continue to enhance our training programs and the professional certification program. The NCWM Professional Certification Program provides confidence that an individual has a strong understanding of U.S weights and measures standards as adopted

by NCWM and published in NIST Handbooks, 44, 130, and 133. The Certification Program was a huge undertaking for a committee of volunteers, so the BOD took action to get the test exams on a faster pace. Ross Andersen, retired New York W&M director, took the challenge to lead the development of these testing examinations. In the last quarter three more exams have been posted to the NCWM website making a total of six modules. I would like to thank Ross, the PDC members and the many volunteers who provided test questions. Next on PDC's schedule is the LPG and price verification modules and volunteers are needed.

It may be that I have simply been more aware of training opportunities, but it seems that training is at an all time high. NIST's grant and leadership role for training has provided many training opportunities throughout the country. Not only has NIST staff been at each of the regional meetings assisting in the technical committees, but they've also been there to provide additional training in some sort of specialized area. The NIST "Train the Trainers" classes have strategically positioned

trainers evenly throughout the country. Many thanks to the Associate Membership Committee which provided assistance with sharing expenses for trainers in many of the local training classes.

The second goal was to build a closer relationship with other standards development organizations. An example of this would be our relationship with the Petroleum Equipment Institute (PEI). PEI has fourteen recommended practices including design, installation, and service and repair in areas of underground fuel storage systems, above ground fuel systems, motor fuel dispensers, diesel exhaust fluids, and compressed natural gas. PEI maintains relationships with federal, state, and local agencies and other industry related groups allowing them to funnel regulatory interpretations and information on current technology and compliance issues. Twice a year, following the NCWM interim and annual meetings, PEI reports a summary of the activities from these meetings in their "PEI Journal".

Continued on page 2

Chairman's Column (cont.)

I urge you to visit their website www.pei.org and review the latest "NCWM" feature report.

Another standards development organization, ASTM, International, is headquartered in the Philadelphia metro area. On Tuesday afternoon's technical session during our 100th Annual meeting, the conference will have a panel discussion on "Complementary Collaboration, A Case Study in Standards Development Cooperation." The panel will include representatives from NCWM and ASTM, International. Additionally, the conference will have another panel of experts presenting the recent CRC Report No. 667 – Diesel Fuel Storage and Handling Guide. This presentation will be a condensed version of an ASTM workshop that will be held at the D02 Committee on Petroleum Products June 2015 meeting. NCWM representation will be included in this workshop.

The third goal is to work closer with federal agencies (FTC, FDA, USDA, etc.). Both the Fuels and Lubricants Subcommittee and the Package and Labeling Subcommittees have

been providing guidance to FTC and FDA during the rulemaking process. Many of the NCWM recommendations are being recognized giving the work of the conference acceptance in federal regulations.

The diversity of knowledge shared among our regulatory officials and industry membership makes this a great organization. Success happens when we are willing to work together!

Finally, I am honored to invite you to the 100th Annual Meeting of the National Conference on Weights and Measures in Philadelphia, Pennsylvania. Not only is it our 100th meeting, but it also is the 110th Anniversary of the conference.

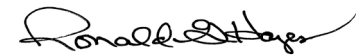
What better place to meet than Philadelphia. During the American Revolution, Philadelphia played an instrumental role as a meeting place for the Founding Fathers of the United States, who signed the Declaration of Independence in 1776 and the Constitution in 1787. Philadelphia was one of the nation's capitals during the

Revolutionary War, and the city served as the temporary U.S. capitol while Washington, D.C. was under construction.

To celebrate this year's conference, we have planned a special lunch banquet featuring a keynote address by N. David Smith of North Carolina. We will recognize NIST contributions, the State of Massachusetts for their 100% meeting participation, and our retirees and past chairs. A drawing will take place for special prizes including a historical (gas pump) dispenser, an antique candy scale, and a placard of all 50 states and U.S. territories' device approval decals.

Our special event will be at the National Constitution Center where we can explore the history and relevance of the Constitution.

Please join us!



- Ronald Hayes, NCWM Chairman,
Missouri Department of Agriculture

NCWM WELCOMES NEW MEMBERS (1/28/15 - 5/1/15)

Americas Autogas Systems

Mark Meadows

AOA Xinetics

Cameron Dryden

Boon County

Terry Culley

California Dept. of Food and Agriculture

Andrea Alley

John Larkin

Kevin Schnepf

California Division of Measurement Standards

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Craig Rodine

City of Milwaukee

Anthony Hoffman

Jay Labecki

Command Alkon

Lonnie Mortensen

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Gloucester County Weights and Measures

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Greene County Indiana Weights and Measures

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LS Retail, Inc.

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Mechadyne Machine, Inc.

David Borgel

Minnesota Dept. of Commerce, Weights and Measures

Eric Johnson

National Raisin Company

Karen Shea

Nevada Dept. of Agriculture, Weights and Measures

Mike Larion

Ohio Dept. of Agriculture

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David Aguayo

Shell Oil Products

Rick Fragnito

Systems Equipment Corporation

Fred Axmear

Town of Brookline

Raymond Cunningham

Town of Wayland

Timothy Walsh

Veeder-Root Company

Ed Dunning

Don't Be a Statistic: Watch for Workplace Hazards

by Brett Gurney, Utah Dept. of Agriculture and Food, Weights and Measures Program

Millions of workers receive serious injuries on the job every year. Most of these injuries can be prevented if the hazards are identified and controlled ahead of time. Conducting a worksite assessment is essential. Injuries can be tragic to employees and can cost billions of dollars each year.

A Weights and Measures Inspector may be exposed to many hazards each day. It is important to identify and eliminate any potential hazards that may exist on the inspection site.

Take a moment and consider the potential hazards that exist for the inspector while inspecting a gas station, vehicle scale, liquefied petroleum gas meter on any other weights and measures inspection. A hazard assessment will help identify, eliminate or control unsafe work situations.

Potential Hazards

Hazards exist in many different forms.

An inspector should look for potential hazards prior to and during the inspection. Hazards may include but are not limited to the following:

- Layout of the inspection site
- Chemicals
- Moving objects (i.e. machinery, people)
- Flying objects
- Compression
- Electrical connections
- Noise
- Slippery surfaces
- Falling objects
- Sharp edges that cut, poke or jab
- Temperatures
- Rolling or pinching objects
- Biological hazards such as blood or other infectious materials

Every possible effort to eliminate a hazard should be made. Identifying hazards is an important aspect of conducting a weights and measures inspection and should be an integral part of developing a safety program.

Questions to Consider

Document hazards and thoroughly answer the following questions.

1. What could possibly go wrong?
2. What would the result be if I came into contact with the hazard?
3. How could I come into contact with the hazard?
4. What other factors may contribute to the hazard?

Identify the Source of the Hazard

Inspectors should also identify potential sources of hazards prior to inspection. These may include the following:

- Electricity
- People
- Harmful dust
- Situations where movement may exist that could result in an impact between personnel and equipment.
- Extreme temperatures that could result in burns, fire or eye injuries.
- Hazardous materials / chemical types
- Ignition sources

Accident Prevention

When considering prevention, take three control methods into account:

1. Engineering Control - Physically alter equipment or environment

to prevent coming into contact with a hazard.

2. Administrative Controls - If possible, displace the hazard from the inspector's exposure.
3. Personal Protective Equipment (PPE) - Select PPE that will provide a level of protection greater than the minimum required to protect inspectors from hazards. PPE condition and age should be evaluated periodically. PPE should be required when necessary. This may include gloves, hard hats, goggles, safety glasses and shoes, etc.

Consider the old adage, "An ounce of prevention is worth a pound of cure".

Job hazard assessment is only effective if preventive actions are taken. Perform a hazard assessment regularly to tell whether you have eliminated or controlled existing hazards, or if any new hazards have developed. Look for new hazards whenever you change equipment, materials, or work processes. Remember, it is better to be safe and not sorry than to overlook a crucial element.

Positive supervision and continued training encourage appropriate actions by the weights and measures inspector.

Why does NTEP allow the use of non-NTEP load cells for some scales?

by Jim Truex, NTEP Administrator

When reading an NTEP Certificate of Conformance (CC) we see in some cases that the load cell used in a scale is identified as non-NTEP. Recently, many have inquired why NTEP allows the use of load cells that are not traceable to their own NTEP CC, hence non-NTEP cells. This article answers that question.

While Handbook 44 does not specifically state that non-NTEP load cells are permitted for use in weighing instruments; Handbook 44 does contain several hints that not all load cells used in commercial scales are required to have an NTEP certificate. For example:

- If we look at Handbook 44, Scales Code, Marking Requirements, Table S.6.3.a., the heading of the fourth column reads "Load Cell with CC (11)." This column heading implies that if these marking requirements are for load cells with a Certificate of Conformance, there must be load cells without a Certificate of Conformance, or non-NTEP load cells.

- Also in the Scales Code, paragraph S.6.3., reads in part: "Scales, main elements of scales when not contained in a single enclosure for the entire scale, load cells for which Certificates of Conformance (CC) have been issued under the National Type Evaluation Program (NTEP, and other equipment necessary to a weighing system...". The statement, "...load cells for which Certificates of Conformance (CC) have been issued..." also implying there must be load cells without a Certificate of Conformance or non-NTEP load cells.

- Additionally, if we look at Scales Code Paragraph S.5.4. we find the following: "This requirement does not apply to complete weighing/load-receiving elements or scales,

which satisfy all the following criteria:

- the complete weighing/load-receiving element or scale has been evaluated for compliance with T.N.8.1. Temperature under NTEP;

- the complete weighing/load-receiving element or scale has received an NTEP Certificate of Conformance;"

Again there is no clear statement, but the fact that the formula shown in S.5.4. does not apply to the two conditions mentioned does imply that if either of these conditions are satisfied the need for the use of load cells without a Certificate of Conformance or non-NTEP load cells is acceptable.

So, Handbook 44 tells us that not all load cells have their own NTEP certificate but does not tell us why. However, it does tell us that the scale or weighing element (containing the load cell) must be evaluated for compliance with T.N.8.

To understand more we must go to NCWM Publication 14, Weighing Devices, NTEP Technical Policy, Section B.1., which contains the following statement:

"The main elements and components (indicating elements and load cells) of scales with a capacity greater than 2000 lb must be tested separately for compliance with the influence factor requirements."

If we read further we will find some exceptions but most of those would result in a provisional NTEP certificate not a full NTEP certificate.

Is there any penalty for using non-NTEP cells? Yes, in fact there is a potential penalty for the certificate holder. NCWM Pub 14, Technical Policy allows for the "Substitution of Load Cells in Scales" using a set of specific requirements to determine if the cells are metrologically equivalent. The first requirement in evaluating metrologically equivalent is that both load cells must have been evaluated separately and have a separate load cell certificate of conformance. Obviously, since a non-NTEP load cell was used in the cases we are addressing, it does not have an NTEP certificate and cannot be substituted. In these cases, the certificate holder must resubmit the device to NTEP for full performance testing to allow the use of another load cell. This is because NTEP does not have values for non-NTEP load cells, such as n_{max} v_{min} to determine equivalency.

Now we can use this information to piece together the facts pertaining to the use of non-NTEP cells used in complete scales and weighing/load-receiving elements.

- NIST Handbook 44 recognizes the use of load cells that do not have their own NTEP Certificate of Conformance.
- NCWM Publication 14 recognizes the use of non-NTEP load cells in scales 2000 lb capacity and less.
- The scale or weighing element containing a non-NTEP load cell or load cells must be tested by NTEP for compliance to influence factor (T.N.8) requirements.

Continued on page 5

Why does NTEP allow the use of non-NTEP load cells for some scales? (cont.)

by Jim Truex, NTEP Administrator

- If a non-NTEP load cell is used it is identified on the NTEP certificate and the load cell cannot be substituted, otherwise the device must be resubmitted to NTEP for a complete performance test using the different cell. When this scenario happens, an amended certificate will be issued that identifies the non-NTEP cells used during the evaluations.

Hopefully, this article has helped eliminate some of the confusion and answer questions that may have been on your mind. If you have additional questions or would like to discuss the content of this article contact Jim Truex at jim.truex@ncwm.net.

Utah Weights and Measures Program Received Governor's Award for Excellence in May 2015.

Congratulations to Brett Gurney and his staff!



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- Dynamically calculates Rc/Rt for tare
- Calculates conversion factors for volume inspections
- Calculates Cost Error, Average Error, Average Cost Error % Error



Device Inspection

WinWam Device Inspection Software is designed to perform and record Handbook 44 inspections. WinWam Device Inspection Software supports all devices specified in Handbook 44 including but not limited to: scales, (apothecary, computing, livestock, shipping, vehicles, etc.) meters, LP Gas, LMD, linear devices, timing devices, etc. Whether acceptance or maintenance WinWam calculates tolerances for nearly all tests.

WinWam Device Inspection Software provides a comprehensive database of business establishments with a complete inventory of devices. Full detail inspection data allows management the ability to better measure economic impact of the W&M program.

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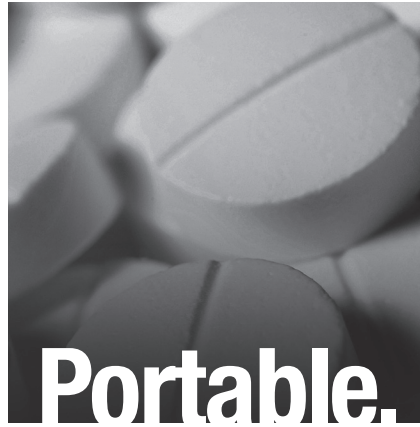
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NCWM 100th Annual Meeting: Lunch Banquet

Tuesday July 21

Join us for a special Lunch Banquet for distinguished recognitions and door prizes. The banquet will open Tuesday from 12:00 p.m. to 2:00 p.m. Admission is included in the full meeting registration fee; guests and observers are welcome to select the option to attend \$60/person. **Attire is business casual.**

FEATURING

Master of Ceremonies

Stephen Benjamin, North Carolina

Keynote Speaker

N. David Smith, North Carolina

Distinguished Recognitions for:

National Institute of Standards and Technology (NIST)

Measurement Canada

Massachusetts 100% Attendance

NCWM Retirees

NCWM Past Chairmen

100th Annual Meeting Planning Group

Door Prizes

An Ode to NCWM

Ivan Hankins, Iowa

1st Prize



2nd Prize



NCWM Membership Application

If completing Membership Application by hand, please do so legibly. Illegible forms may delay processing times.

MEMBER INFORMATION											
Member ID:		Membership Type: <input type="checkbox"/> Government \$75 <input type="checkbox"/> Industry \$90				Type of Application: <input type="checkbox"/> New Member <input type="checkbox"/> Current Member Renewal <input type="checkbox"/> Lapsed Member Renewal					
Last Name:					First Name:			Middle Initial:		Suffix:	
Title:					Organization:						
Street Address:											
City:					State:		Zip Code:		Country:		
Phone Number:			Fax Number:			Email Address (Required):					
Website:											
COMPLIMENTARY PUBLICATIONS (Select All Publications You Wish To Receive)											
<input type="checkbox"/> Handbook 44 (member will receive 2015 or current edition) Specifications, Tolerances and Other Technical Requirements for Weighing and Measuring Devices, as adopted by the 94 th National Conference on Weights and Measures											
<input type="checkbox"/> Handbook 130 (member will receive 2015 or current edition) Uniform Laws and Regulation, as adopted by the 94 th National Conference on Weights and Measures											
<input type="checkbox"/> Handbook 133 (member will receive 2015 or current edition) Checking the Net Contents of Packaged Goods, as adopted by the 94 th National Conference on Weights and Measures											
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Applicant agrees to and accepts all the following terms and conditions for membership to the National conference on Weights and Measures (NCWM). 1) The NCWM policies, practices and procedures set forth in its Bylaws and publications are incorporated by reference as terms and conditions of NCWM Membership. 2) Applicant agrees that the law of the State of Nebraska shall control the interpretation and construction of the NCWM and business relationships, including choice of law provisions. The parties agree that the exclusive legal forum of choice of the parties shall be the Lancaster County State District Court located in Lincoln, Nebraska. 3) Applicant agrees that NCWM, its officers, directors, employees and agents shall have no liability for any damages of any nature in excess of the dues or fees paid, as applicable. This limitation of liability is a condition of NCWM membership.

NOTE: When submitting an application electronically, you will be prompt to select an email client. Choose the option that is best suited to you (Desktop Email Application or Internet Email). Follow the directions on the screen. Once email is set-up, the application will attach to an email. Select "Send" and the application will be sent via email to NCWM. This may take a minute, so please be patient. If you do not receive an email confirmation from NCWM within one business day, your application most likely was not received by NCWM and you will need to resend.

NCWM 100th Annual Meeting Special Event: The National Constitution Center Wednesday July 22

Visit. Learn. Debate. Spend an evening amongst a range of inspiring and immersive exhibits at The National Constitution Center!

The National Constitution Center was the first and only institution in America established by Congress. They envisioned a location where information could be disseminated about the United States Constitution on a non-partisan basis in order to increase public awareness and knowledge of the Constitution.

Attendees will depart from the Sheraton Philadelphia Society Hill Hotel on Wednesday, July 22nd at 5:15 p.m. and be transported by bus to our destination. The buses will return to the hotel at 9:00 p.m. Admission is included in the full meeting registration fee; guests are welcome to purchase tickets \$100/person. **Business attire please.**



VISIT. LEARN. DEBATE.

Trivia Answer Key:
#1 a. Wrigley's Gum, #2 d. 3000, #3 a. 7 pitches, #4 c. Popeye, #5 b. 1966, #6 b. Dr. Pepper, #7 c. 1915, #8 a. 9, #9 b. Metrology, #10 a. Planck #11 d. 11, #12 a. Cubit, #13 c. Platinum, #14 a. 1728, #15 b. 3, #16 d. a pair of oxen could plough in one day, #17 c. 1/2 mile, #18 a. chain, #19 d. 240 #20 c. China

NCWM Trivia

See how many of these weights and measures questions you can answer!

1 - The first packaged product to have a bar code was:

- a. Wrigley's Gum
- b. Nestle's Crunch
- c. Kellogg's Corn Flakes
- d. Pepto Bismol

2 - How many cows does it take to supply the NFL with a 1-year supply of footballs?

- a. 100
- b. 500
- c. 1500
- d. 3000

3 - The average lifespan of a major league baseball is:

- a. 5 pitches
- b. 7 pitches
- c. 15 pitches
- d. 22 pitches

4 - NCWM once considered an ad campaign featuring:

- a. Benjamin Franklin
- b. John Adams
- c. Popeye
- d. Thomas Jefferson

5 - What year was the Fair Packaging and Labeling Act signed into law?

- a. 1962
- b. 1966
- c. 1969
- d. 1971

6 - What beverage company began in Texas in 1885?

- a. Pearl Brewing Company
- b. Dr. Pepper
- c. Kool-Aid
- d. Coca-Cola

7 - What year did NCWM adopt the first national standards for weighing and measuring devices?

- a. 1909
- b. 1912
- c. 1915
- d. 1919

8 - The first meeting held in 1905 was attended by regulatory officials from how many states?

- a. 9
- b. 12
- c. 18
- d. 25

9 - What name is given to the science of measurement?

- a. Numismatics
- b. Metrology
- c. Rhochrematics
- d. Quantrology

10 - What name is given to the smallest known unit of time?

- a. Planck
- b. Nanosecond
- c. Jiffy
- d. Quanto

11 - To the nearest pound, how many pounds are there in 5 kilograms?

- a. 14
- b. 7
- c. 3
- d. 11

12 - What name was given to the measure equal to the distance of the elbow to the tips of the outstretched hand?

- a. Cubit
- b. Rod
- c. Foot
- d. Ulna

13 - The kilogram is defined as the mass of a particular lump of metal kept in France. It is made of 90% of what type of metal?

- a. Palladium
- b. Titanium
- c. Platinum
- d. Iridium

14 - How many cubic inches are there in a cubic foot?

- a. 1728
- b. 144
- c. 6
- d. 12

15 - In England during the 12th century, how many barleycorns were there in one inch?

- a. 5
- b. 3
- c. 2
- d. 6

16 - An acre was originally defined as the area of land that:

- a. a peasant could own in ancient Greece
- b. was capable of producing food for a typical family
- c. can hold on acre-foot of water
- d. a pair of oxen could plough in one day

17 - The Burj Khalifa tower in Dubai is how tall?

- a. 1/4 mile
- b. 1/3 mile
- c. 1/2 mile
- d. 3/4 mile

18 - Which is the odd one out:

- a. rod
- b. pole
- c. perch
- d. chain

19 - How many pounds heavier than an American ton is a British ton?

- a. 60
- b. 110
- c. 200
- d. 240

20 - In the sixth century B.C., which Asian country was the first nation to adopt a decimal system?

- a. Tibet
- b. Japan
- c. China
- d. Mongolia

Answers on page 11



SERAPHIN[®]

Seraphin[®] is happy to be sharing its 100 Year Anniversary with the National Conference on Weights and Measures. We would like to thank our customers and the many friends we have made for their loyal support. We know that it is because of you that we have reason to celebrate. Thank you for being part of our success.



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Looking forward to our next 100 years!



2015 Annual Meeting Registration Form

July 19-23, 2015 / Philadelphia, Pennsylvania

Please submit form in one of the following ways:

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Observer: A first-time attendee, with no voting rights and will pay additional fees associated with special events.					
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Name:			Name for Badge:		
REGISTRATION FEES *\$25.00 FEE WILL BE ADDED TO ON SITE REGISTRATION					
	NCWM Member	Non-Member	Retired Member	Observer	
Before June 17, 2015	\$400.00	\$475.00	\$0.00	\$200.00	
After June 17, 2015	\$450.00	\$525.00	\$0.00	\$250.00	
Sunday OR Tuesday Only	\$100.00	\$150.00	\$0.00		
SPECIAL EVENT FEES					
	NCWM Member	Non-Member	Retired Member	Observer	Guest
Chairman's Reception	included	included	included	\$35.00/person	\$35.00/person
Light Breakfast	included	included	included	included	\$30.00/person (4 day package)
Lunch Banquet	included	included	included	\$60.00	\$60.00
Special Event: The National Constitution Center <i>*Business attire please</i>	included	included	\$100.00	\$100.00	\$0.00 under age 5 \$50.00 ages 6-13 \$100.00 ages 14 older
PAYMENT INFORMATION					
Are <u>You</u> Attending the <u>Chairman's Reception</u> : <input type="checkbox"/> Yes <input type="checkbox"/> No			Is <u>Your Guest</u> Attending the <u>Chairman's Reception</u> : <input type="checkbox"/> Yes <input type="checkbox"/> No		
			Will <u>Your Guest</u> need a <u>Light Breakfast</u> : <input type="checkbox"/> Yes <input type="checkbox"/> No		
Are <u>You</u> Attending the <u>Lunch Banquet</u> : <input type="checkbox"/> Yes <input type="checkbox"/> No <i>*Contact Elisa Stritt for Vegetarian Options, 402-434-4872</i>			Is <u>Your Guest</u> Attending the <u>Lunch Banquet</u> : <input type="checkbox"/> Yes <input type="checkbox"/> No <i>*Contact Elisa Stritt for Vegetarian Options, 402-434-4872</i>		
Are <u>You</u> Attending the <u>Special Event</u> : <input type="checkbox"/> Yes <input type="checkbox"/> No			Is <u>Your Guest</u> Attending the <u>Special Event</u> : <input type="checkbox"/> Yes <input type="checkbox"/> No		
<input type="checkbox"/> VISA <input type="checkbox"/> MasterCard <input type="checkbox"/> Discover <input type="checkbox"/> American Express <input type="checkbox"/> Check Enclosed (made payable to NCWM)					
Account Number:					
Exp. Date:			Security Code:		
Billing Address:				Zip Code:	
Name on Card:			Total Amount Enclosed: \$		

No audio or video recording devices are allowed. Written reports will serve as the official record for meetings.

Cancellation Policy

Cancellations received by June 17, 2015 are subject to a 15% cancellation fee. Cancellations received after June 17, 2015 is subject to a 50% cancellation fee. No refunds will be given after the event has commenced. In the case of a state-declared natural emergency a full refund will be issued. Refund requests due to personal medical emergencies shall be considered based on documentation. In such instances, a full refund may be issued. Refunds will only be made on registration fees paid to the National Conference on Weights and Measures.



NTEP Certified

Liquid Controls

Positive Displacement Meters and Sponsler Turbine Meters

The employees of Liquid Controls (LC) would like to recognize the service provided by the members of the National Conference on Weights and Measures (NCWM). Since we sold our first flowmeter to the United States Air Force in 1956, Liquid Controls has enjoyed considerable success, evolving into a stable, profitable company relied on by both employees and customers. In our 50 plus years of business, we have employed thousands of skilled workers who have crafted millions of quality products that continue to accurately measure liquids for businesses all around the world. Liquid Controls success would have been impossible without the NCWM. By holding LC and all manufacturers accountable, the NCWM plays an indispensable role in sustaining a healthy, competitive marketplace where hard work and craftsmanship are rewarded. The employees at Liquid Controls are proud of, and comforted by, the vital role that the NCWM plays in our industry, and we applaud the proficiency of those at the NCWM who take on that role.

SPONSLER TURBINE METERS

½ to 4"

1½ to 1,200 GPM

Solvents, gasoline,
diesel, fuel oil, ethanol,
LPG, and DEF

NTEP CC 04-097

CONTACT US FOR MORE INFORMATION

Liquid Controls
105 Albrecht Dr.
Lake Bluff, IL 60044

T - 800.452.5262

F - 847.295.1057

www.lcmeter.com

LIQUID CONTROLS POSITIVE DISPLACEMENT METERS

1½ to 8"

6 to 1,200 GPM

Refined fuels, aviation,
LPG, ethanol, and general
solvents

NTEP CC 99-141



LC
LIQUID CONTROLS GROUP



National Conference on Weights and Measures

1135 M Street, Suite 110 / Lincoln, Nebraska 68508

Event Calendar

Be sure to mark your calendar for all the upcoming NCWM, NIST and regional meetings.

July 2015

***100th NCWM Annual Meeting**
Philadelphia, Pennsylvania
July 19 - 23

August 2015

NTEP Grain Analyzer Sector Meeting
*Live Web Meeting
August 19 - 20
NTEP Weighing Sector Meeting
Denver, Colorado
August 25 - 26

*Further meeting details will be announced closer to the meeting dates at www.ncwm.net/meetings.

September 2015

NTEP Measuring Sector Meeting
Denver, Colorado
September 15 - 16
NTEP Software Sector Meeting
Denver, Colorado
September 16 - 17
WWMA Annual Meeting
Boise, Idaho
September 27 - October 1

October 2015

CWMA Interim Meeting
St. Charles, Missouri
October 5 - 7
NEWMA Interim Meeting
Springfield, Massachusetts
October 13 - 15
SWMA Annual Meeting
Biloxi, Mississippi
October 24 - 29