**U.S. National Work Group**

**Measuring Systems for Electric Vehicle Fueling and Submetering**

Watthour Type Electric Meter Subgroup

**September 12-14, 2017**

**F2F (Sacramento, CA) and Tele/web Conference**

 **Draft Meeting Agenda-Rev-8-29-17**

**Time:** Tuesday-Thursday, September 12-14, 2017

 9:00 a.m. through 5:00 p.m. Pacific Time

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| **Adobe Connect Web Conference Meeting Name:** | See URLs in Web Conference Details BELOW12SEP2017 WHE SUBGRP F2F & TELEWEB CONF MTG-**DAY 1**13SEP2017 WHE SUBGRP F2F & TELEWEB CONF MTG-**DAY 2**14SEP2017 WHE SUBGRP F2F & TELEWEB CONF MTG-**DAY 3** |
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**Summary:** The U.S. National Work Group (USNWG) on Measuring Systems for Electric Vehicle Fueling and Submetering’s Subgroup (SG) on Watthour Type Electric (WHE) Meters will meet face to face on September 12-14, 2017 in Sacramento CA and by tele/web conference to discuss the full development of a November 2014 version of a watthour meter draft code, intended to address legal metrology requirements for the device its minimum inspection and test procedures and test equipment, the appropriate method of sale of electricity through the device and an efficient process for achieving these goals. Additional discussion may include topics such as wireless technology, test procedures, traceability of test standards, and the subgroup’s next steps; as well as the U.S. standards development process and timelines for other related projects.

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**Purpose:** The U.S. National Work Group on Measuring Systems for Electric Vehicle Fueling and Submetering was formed to develop proposed requirements for commercial electricity-measuring devices (including those used to measure and sell electricity commercially delivered as vehicle fuel and those used in submetering electricity at residential and business locations) and to ensure that the prescribed methodologies and standards facilitate measurements that are traceable to the International System of Units (SI). This work is ***not*** intended to address utility metering in the home or business where the electricity meter is used by a public utility in connection with measuring electricity subject to the jurisdiction of a Public Utilities Commission or other municipality.

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| **List of Attachments** | **Related Agenda Item** |
| **USNWG Roster –****July 27, 2017 version** | 1a |
| **Proposed Modifications to Operational Guidelines – August 26, 2016 version** | 1b |
| **Draft NIST Handbook 44 Device Code Requirements for Electric Watthour Submetering** | 4 |
| **Draft NIST Handbook 130 Method of Sale Requirements for Electric Watthour Submetering** | 4 |

| **Glossary of Acronyms** |
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| ANSI | American National Standards Institute | NCWM | National Conference on Weights and Measures, Inc. (<http://www.ncwm.net/>) |
| CFR | Code of Federal Regulations | NEC | National Electrical Code |
| EPO | Examination Procedure Outline | NEMA | National Electrical Manufacturers Association |
| EUMD | End Use Measurement Device | NIST  | National Institute of Standards and Technology |
| EVF&S | Electric Vehicle Fueling and Submetering | NTEP | National Type Evaluation Program a program administered by NCWM to ensure device conform to type and Handbook requirements. (<http://www.ncwm.net/ntep>)  |
| EVSE | Electric Vehicle Supply Equipment | OWM | Office of Weights and Measures |
| HB 44 | NIST Handbook 44 *Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices* | PEV | Plug-in Electric Vehicle |
| HB 130 | NIST Handbook 130 *Uniform Laws and Regulations in the Area of Legal Metrology and Engine Fuel Quality* | S&T | NCWM Specifications and Tolerances Committee (device issues) |
| IEEE | Institute of Electrical and Electronics Engineers | SI | International System of Units |
| kW | Kilowatt | SGIP-PAP 22 | Smart Grid Interoperability Panel - Priority Action Plan 22: “EV Fueling Submetering Requirements” |
| kW•h | Kilowatt hour | SUBGRP | SUBGROUP |
| L&R | NCWM Laws and Regulations Committee(MOS and fuel quality issues) | USNWG | U.S. National Work Group |
| MOS | Method of Sale | WHE | Watthour Type Electric Meter |
| This table is meant to assist the reader in the identification of acronyms used in this document and does not imply that these terms are used solely to identify these organizations or technical topics. |

# Welcome and Roll Call

1. **USNWG Roster Updates**

New members of the USNWG WHE Subgroup (SG) and visitors will be welcomed. The meeting will be called to order and roll called using updated roster (see separate attachment) to establish a quorum.

1. **Operational Guidelines**

The scope and goals of the USNWG will be reviewed, including the Operational Guidelines (see separate attachment). Note that the larger USNWG approved proposed 26AUG2016 modifications to these Operational Guidelines (developed over the course of several meetings in 2014 and 2015), which are intended to ensure the clarification of the split of the USNWG into two separate Subgroups (for EVSE and watthour electric meter applications) as well as criteria for a quorum for each meeting.

# Agenda Review and Approval

The WHE SG will be asked to review and approve the agenda for its September 12-14, 2017 meeting. Note that any new items must be submitted prior to the meeting in accordance with the Work Group’s operational guidelines.

# Background Information and Framework

OWM received input from WHE SG members suggesting that, prior to beginning work on the technical items on the SG agenda, a small amount of time be allotted to allow the presentation of information to help frame the work and enable work group members to gain a perspective of how legal metrology requirements for sub-metering systems are to be developed and applied in the U.S. With this in mind, OWM proposes several short (10 minutes each) presentations (formal or informal) on the topics, such as the U.S. Weights and Measures System and state/local regulatory, industry, and international perspectives. The Technical Advisor is collaborating working with others to finalize this item.

The following listing of tasks is included as a reminder of the key tasks that are to be addressed by the WHE SG. Since there may be instances in which the WHE SG can borrow from work already completed by the USNWG EVSE Subgroup to make the WHE work go more quickly, tasks before the EVSE Subgroup are also included as reference.

| **USNWG on Electric Vehicle Refueling & Submetering****Overview of Tasks** |
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| 1. **EVSE Standards**
2. **NIST Handbook 44 Codes**
3. EVSE Code (Tentative Code)
	* + Proposed phase-in dates for any requirements?
		+ Changes to address wireless?
		+ Other refinements to recommend?
4. Timing Devices Code (Proposed Revisions)
	* + Refinements or changes to recommend?
5. **Test Equipment**
6. Standards
7. Traceability
8. **Test Procedures**
9. Draft Examination Procedure Outline 30
10. NTEP
11. Trials and Vetting
12. Finalization
13. **Education**
14. Administrators - Overview
15. Field Officials – Inspection and testing
 | 1. **Utility-Type Electric “Submeters” (Terminology TBD)**
2. **NIST Handbook 44 Codes**
3. Develop Tentative Code
4. **Test Equipment**
5. Identify/develop standards for test equipment
6. **Test Procedures**
7. Identify/develop test procedures
8. NTEP
9. **Education**
10. Provide education for administrators and officials
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# Draft New NIST Handbook (HB) 44 – 3.XX Code for Electric Watthour Meters and Draft Requirements for NIST Handbook 130 -Uniform Regulation for the Method of Sale (MOS) of Commodities Section 2. Non-food Products, Electric Watthour Meters

The California Code of Regulations for utility watthour meters was the basis for the first draft electric measuring devices code considered by the USNWG even though the USNWG intended to address two separate systems where the transfer of electrical energy was the basis for a commercial transaction. The California Code applies to utility type watthour meters not owned by the utility company, where the end user is not subject to regulation by the public utility commission or public services administration. In January 2014, the USNWG agreed to focus its work on the development of a set of uniform legal metrology requirements for electric vehicle charging systems because this was the fastest emerging technology of the two applications. The USNWG must now agree on the process it will follow to resume work on legal metrology requirements for watthour submeter applications.

The USNWG will also need to discuss possible modifications to NIST HB 130 method of sale (MOS) requirements, where applicable, to address watthour meter applications since the current HB 130 MOS is specific to EVSEs.

A draft device code intended for NIST HB 44 that addresses *only* the electric watthour meter application has not been distributed. The USNWG started with a May 2014 draft code that was modified in November 2015 (see separate attachment) so that it no longer includes any references to EVSE-specific requirements. Legal metrology requirements for EVSEs were adopted by the weights and measures community in July 2015 and were first published in the 2016 edition of NIST HB 44 Section 3.40.

**Recommendation:** The USNWG should: (1) discuss its timeline and approach for reviewing draft codes that address the design, accuracy, installation, and use, test procedures as well as the MOS for watthour metering systems’ applications; and (2) begin work reviewing sections of the code and comments received.

# Notice to the 2017-2018 NCWM Regarding the Proposed Draft NIST Handbook 44 Electric Watthour Meter Code’s Status

**Background:** Because the SG’s recommendations on a draft NIST Handbook 44 Code will ultimately be forwarded to the NCWM for consideration, it is important that the weights and measures community receive an update on what to expect in a final draft code proposal, the similarities and differences from existing HB 44 Codes, as well as the status of requirements for test procedures/equipment for these systems as this work progresses.

The meetings listed below represent the upcoming forums for the weights and measures standards development process that take place at the beginning of the 2017 cycle (August 2017-July 2018).

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| ***2017-2018 NCWM Meetings*** |
| **Interim Meeting****January 21-24, 2018**St. Pete Beach, FLhttps://www.ncwm.net/sems/event\_detail/2018-interim-fl | **Annual Meeting****July 15-19, 2018**Tulsa, OK |
| 2016 NCWM S&T Committee Chairman Ivan D. Hankins, IIIIowa Weights and Measures2230 S. Ankeny Blvd.Ankeny, Iowa 50023515-725-1492 Office515-371-7212 CellIvan.hankins@iowaagriculture.gov | 2018 NCWM L&R Committee Chairman Ethan BogrenWestchester County, NYDept. of Weights & Measures(914)995-2179 phone(914)995-5259 faxEmail: neb2@westchestergov.com |

**Recommendation:** The SG should consider submitting a Developing item to the NCWM to keep that community apprised of this work.

# Action Items, Next Steps, and Communications

**Background and Recommendation:** To assist in managing the WHE SG’s work, an “Action Items, Next Steps, and Communications” section will be included with each meeting summary. This item is included on the agenda to allow the SG to review action items and next steps identified during its meeting and to ensure that those assigned with follow-on tasks confirm agreement with the task and timeline.

# Next Meeting

The USNWG will discuss the format, date, location and topics for its next meeting(s). The SG should attempt to select dates where no major events are already scheduled for the electrical energy and weights and measures communities. Please bring your updated calendars for reference during this discussion.

# Items of Interest – As Time Permits

This agenda item is included to provide an opportunity for the group to discuss items related to work on EVSE. While the work does not immediately affect this SG

1. ***NTEP Checklist for Electric Vehicle Supply Equipment***

The National Conference on Weights and Measures (NCWM) is sponsoring a National Type Evaluation Program (NTEP) Work Group (WG) that will develop an NCWM Publication 14 Type Evaluation Checklist for EVSE devices based on the appropriate requirements in NIST Handbook 44 and/or NIST HB 130.  More information on the NCWM is available on the NCWM website at:  <http://www.ncwm.net/>.

The NTEP EVSE WG is chaired by Andrei Moldoveanu (National Electrical Manufacturers Association (NEMA) headquartered in Roslyn VA available at:  and\_moldoveanu@nema.org) and the work group reports to the NTEP Committee (a subgroup of the NCWM Board of Directors (BOD)).  The NTEP EVSE WG representatives were recruited from NTEP laboratories/evaluators, EVSE experts, test equipment experts, the Federal Government and a technical industry association.    The NTEP EVSE WG has held 4 tele/web conferences and plans to hold monthly meetings until it accomplishes its goals.  The EVSE Device Checklist must be first evaluated and then certified by NTEP.

1. ***Update on Work on EVSE Test Procedures and Test Standard Criteria***

OWM will provide an update on continued development of Field Test Procedures and Test Standard Criteria.