

**EVF-22.1 V SECTION 3.40. ELECTRIC VEHICLE FUELING SYSTEMS.**

**Source:** Craig VanBuren (MI), Hal Prince (FL), Mahesh Albuquerque (CO), Marc Paquette (VT)

**Purpose and Justification:**

To establish Section 3.40 Electric Vehicle Fueling Systems – Tentative Code as a permanent code.

**OWM Executive Summary for EVF-22.1  
Section 3.40. Electric Vehicle Fueling Systems**

**OWM Analysis:** Opposition exists for delaying the adoption of the code as a permanent code; however, opposition also exists for upgrading the status of the code without making changes to specific sections.

The proposed changes to specific sections are still under development and have yet to be finalized and fully reviewed and vetted by the weights and measures community; these are presently included on the S&T Committee’s as “Developing” items EVF-21.1 and EVF-21.5.

NIST OWM recommends the NCWM consider some alternative options that allow requirements for electric vehicle fueling systems to be adopted on a timeline sooner than July 2023, but still allows for full vetting of any proposed changes to specific sections. OWM offers some alternatives below to consider.

Both of the options outlined below include the following.

- Accelerates the timeline for voting such that the results would be reflected in the 2023 edition of NIST Handbook 44. The vote would occur fall 2022 or January 2023, rather than July 2023.
- Allows for voting on the upgrading of the tentative code to a permanent status --- with or without additional modifications;
- Allows work to progress on the Developing items on the Committee’s agenda following the July 2022 NCWM Annual Meeting, but establishes a compressed timetable and deadline by which any recommended modifications would need to be submitted in order to be considered for a vote at same time as the vote on the status of the code.
- Proposes any such modifications to the tentative code to be presented as separate voting items. Any items that are adopted would be included in the upgraded code.

*Note: Specific timelines for voting and NIST Handbook publication would need to be agreed upon by the Committee and NIST.*

**Option 1 – Electronic Voting, Fall 2022**

- Voting takes place via electronic ballot in late fall 2022.

**OWM Executive Summary for EVF-22.1**  
**Section 3.40. Electric Vehicle Fueling Systems**

- Results of the electronic vote will be reflected in the *electronic and hard copy versions* of the 2023 NIST Handbook 44.
  - There will be minimal or no delay in the publishing of the *electronic version*.
  - There may be an approximately one-month delay in the publication of the *hard copy version*.

**Option 2 – In-Person Voting, January 2023 NCWM Interim Meeting:**

- Voting takes place in person at the January 2023 NCWM Interim Meeting.
- The *electronic version* of the 2023 edition of NIST Handbook 44 is posted in Fall 2022 according to the normal publication schedule. However:
  - A statement is included at the beginning of Section 3.40 that a special vote will take place in January 2023 on the status of Section 3.40 and may include other modifications to Section 3.40 and Appendix D – Definitions.
  - A statement is also included on the NIST website referencing the potential changes to Section 3.40 and Appendix D - Definitions.
- The *hard copy version* of the 2023 edition of NIST Handbook 44 is issued after the January 2023 NCWM Interim Meeting vote.

**Key Points for Consideration:**

- The urgency for voting on this item at the July 2022 NCWM Annual Meeting appears to be driven by the following:
  - (1) The tentative status of the code limits accessibility to federal funding under the NEVI program to only those jurisdictions that have adopted enforceable standards and upgrading the code provides an expedient method for adoption in many states.
  - (2) Weights and measures jurisdictions need to have enforceable standards in place in order to enable industry to place electric vehicle-fueling systems into commercial service and meet the demands of consumers needing to purchase electrical energy for vehicle fuel.
  - (3) Without the adoption of a permanent code, those states needing to respond to the urgent need may be driven to adopt their own standards, leading to non-uniformity of requirements for EVFS.
  - (4) Further delays in upgrading the status of the tentative code to “permanent” will permit additional equipment that is not capable of meeting the provisions of the tentative code to be installed, continuing to create inequities for those systems that are capable of complying should such equipment be allowed to remain in place indefinitely.
- Support for upgrading the tentative code includes the above factors and the following:
  - The tentative code was widely vetted before its adoption in 2016 and has been available for review for over six years.

<b>OWM Executive Summary for EVF-22.1 Section 3.40. Electric Vehicle Fueling Systems</b>	
	<ul style="list-style-type: none"> <li>○ Comments from multiple sources (industry and regulatory) have indicated interest in the upgrading of the code.</li> <li>○ At least 15 type evaluation certificates have been issued by the State of CA on EFVS.</li> <li>● Opposition for upgrading the tentative code at the July 2022 NCWM Meeting includes:               <ul style="list-style-type: none"> <li>○ Concerns were raised in 2020 by a group of industry members about the application of the code to existing and newly-manufactured devices.                   <ul style="list-style-type: none"> <li>▪ The original proposals did not meet with the approval of the NCWM and regional weights and measures associations.</li> <li>▪ Some proposals were withdrawn, however, the Committee felt some had merit and designated them as Developing on the S&amp;T Committee’s agenda to allow the industry submitters the opportunity to modify the proposals to reflect concerns raised by the community.</li> </ul> </li> <li>○ The submitters of these Developing items have been working with the USNWG to develop proposed revisions.                   <ul style="list-style-type: none"> <li>▪ Once complete the revisions will be presented for vetting and review by the weights and measures community.</li> </ul> </li> <li>○ Upgrading the tentative code before these proposed changes can be considered would negatively impact devices that are already installed and some that are in the process of being manufactured.</li> </ul> </li> <li>● The basis for establishing this as a Priority Item is related to concerns over safety. While there is a clause that references other national safety standards, NIST Handbook 44 is not a safety standard.</li> </ul>

<b>Table 3. Summary of Recommendations</b>						
<b>EVF-22.1</b>	<b>V</b>					<b>Section 3.40. Electric Vehicle Fueling Systems.</b>
	<b>V</b>	<b>D</b>	<b>W</b>	<b>A</b>	<b>I</b>	<b>Notes</b>
Submitter	✓					
OWM						See OWM’s Analysis above.
WWMA	(4)					Priority Item developed May 2022 after regionals met.
SWMA	(4)					Priority Item developed May 2022 after regionals met.
NEWMA	(4)					Priority Item developed May 2022 after regionals met.
CWMA	(4)					Priority Item developed May 2022 after regionals met.
NCWM	✓					
		<b>Letters of Support</b>		<b>Letters of Opposition</b>		<b>Notes</b>

Table 3. Summary of Recommendations						
EVF-22.1	V	Section 3.40. Electric Vehicle Fueling Systems.				
	V	D	W	A	I	Notes
Industry						
Manufacturers						
Retailers and Consumers						
<b>Key:</b> (1) – Submitted modified language (2) – Item not discussed (3) – No meeting held (4) – Not submitted on agenda (5) – No recommendation or not considered						

**Item Under Consideration:**

**Section 3.40. Electric Vehicle Fueling Systems —~~Tentative Code~~**

~~This tentative code has a trial or experimental status and is not intended to be enforced. The requirements are designed for study prior to the development and adoption of a final code. Officials wanting to conduct an official examination of an Electric Vehicle Supply Equipment (EVSE) or system are advised to see paragraph G-A.3. Special and Unclassified Equipment. (Tentative Code Added 2015)~~

**The status of Section 3.40. Electric Vehicle Fueling Systems was changed from “tentative” to “permanent” effective January 1, 2023.**

**(Added 2015) (Amended 2022)**

**Purpose and Justification:**

A notification was distributed on June 24, 2022 to the NCWM Membership announcing the Specifications and Tolerances Committee and the NCWM Board of Directors had accepted this Priority Item as a Voting Item for the 107th Annual Meeting in July 2022 in accordance with NCWM Policy 3.3.2. Procedures to Modify Handbooks.

In 2012, NIST formed the U.S. National Work Group (USNWG) on Measuring Systems for Electric Vehicle Fueling. Membership opportunities were announced in Federal Register Notice 2012-19285. The chief purpose of the USNWG was to develop national uniform standards and requirements for EVSE. USNWG members included federal, state, and local government, various electrical component and EVSE manufacturers, other EVSE industry representatives, and representatives from nationally recognized testing laboratories. The proposed requirements in this regulation are the work product of the USNWG. they have been fully developed and vetted over the course of seven years. Since 2016, EVSE specifications and tolerances have been published in NIST Handbook 44 and made available to the public and the EVSE industry. Industry has had over five years to design and engineer EVSE to meet the published requirements.

We are requesting this be made a priority item. In addition to the code having been published in Handbook 44 since 2016, we believe this would fall under; NCWM Policy 3.3.2. E. Exceptions to Policy for Submission of Items to the NCWM Committee Agenda; Submission of “Priority” Items, Part 1.d. items which could affect health and safety.

As you may be aware, the U.S. Department of Transportation has released the National Electric Vehicle Infrastructure Formula Program (NEVI) which allocates \$5 billion to the states to support EV charging infrastructure. Plans for use of these funds are due August 1, 2022. It is our contention that without national standards in place, there is the opportunity for funds to be disseminated at year’s end to businesses that could manufacture unsafe devices.

**[https://www.fhwa.dot.gov/environment/alternative\\_fuel\\_corridors/nominations/90d\\_nevi\\_formula\\_program\\_guidance.pdf](https://www.fhwa.dot.gov/environment/alternative_fuel_corridors/nominations/90d_nevi_formula_program_guidance.pdf)**

The submitters believe making this code permanent will ensure the safety of use and testing as more are put into service. They also understand that, like every other code in Handbook 44, requirements are continually changed and updated.

### **NIST OWM Detailed Technical Analysis and Executive Summary:**

The tentative EVFS code in NIST Handbook 44 has been in place since 2016 after extensive development and vetting with the weights and measures community.

The point of upgrading the status of the code might be argued by the submitters and others anxious to have an enforceable code in place as reasonable with regard to due process since the provisions in the code have been in place and jurisdictions and industry have had the opportunity to work with the code for six years.

- Comments from multiple sources (industry and regulatory) have indicated interest in the upgrading of the code.
- This is further supported by the fact that 15+ type evaluation Certificates that have been issued by the State of CA indicating there are devices that already comply the requirements as specified in the tentative code.

Those who have concerns with specific sections of the code may disagree with this assessment.

- Some industry members have expressed concerns about specific sections of the tentative code.
- These individuals presented specific proposals to the NCWM in August 2020; some of these proposals were designated as Developing items on the current S&T Committee agenda.
  - These Developing items remain on the Committee’s agenda while the submitters work to address comments received from the NCWM, regional weights and measures associations, and others and modify the proposals to include recommendations acceptable to the weights and measures community.

The urgency for voting on this item at the July 2022 NCWM Annual Meeting seems to be driven by several factors, including the following:

- 1) The tentative status of the code limits accessibility to federal funding under the NEVI program to only those jurisdictions that have adopted enforceable standards. Upgrading the status of the code to permanent at the July 2022 NCWM Annual Meeting provides a more expedient mechanism for establishing enforceable standards in those states that adopt NIST Handbook 44 by reference than do other legislative mechanisms.
- 2) Weights and measures jurisdictions need to have enforceable standards in place in order to enable industry to place electric vehicle-fueling systems into commercial service and meet the demands of consumers needing to purchase electrical energy for vehicle fuel.
- 3) Without the adoption of a permanent code, those states needing to respond to the urgent need may be driven to adopt their own standards, leading to non-uniformity of requirements for EVFS.
- 4) Further delays in upgrading the status of the tentative code to “permanent” will allow the opportunity for additional equipment that is not capable of meeting the provisions of the tentative code to be installed, continuing to create inequities for those systems that are capable of complying should such equipment be allowed to remain in place indefinitely.

While these are all valid concerns, there are several items on the S&T Committee’s agenda for which some members of industry expressed concerns two years ago over specific sections of the existing code. These items have been assigned a Developing status based on the fact that the proposals as presented to the Committee did not meet with the approval of the regional weights and associations and others who submitted comments, but the submitters indicated a willingness to work with the community to develop alternative recommendations that would address these concerns. The submitters of these Developing items have been working with the NIST US National Work Group EVFE Subgroup over the past six months to modify these recommendations and are making steady progress towards alternatives that might be more acceptable to the weights and measures community. Even if the submitters had alternatives ready to present to the Committee, presenting them for adoption at the NCWM July 2022 Annual Meeting would not allow the time for review and comment by many who could be impacted by their adoption.

The weights and measures community needs to find a solution that allows time for the submitters of the Developing items to widely vet any final proposed modifications, yet does not inordinately delay the adoption of a code which is desperately needed to help preserve equity in the EFVS marketplace.

The basis for establishing this as a Priority item is related to concerns over safety.

- There is a clause in the “Application” section of the NIST HB 44 Section 3.40 (EVSE Code) notes NTEP will only accept devices for evaluation which have received safety certification from Nationally Recognized Testing Laboratory, making it clear that the assessment for compliance with safety is not done by W&M (unless the program happens to also have authority to enforce other safety regulations outside of HB 44 in their state).
- However, OWM notes that NIST Handbook 44 is not a safety standard. Devices are already required to comply with safety requirements specified in safety standards such as those applied by UL, state Fire Marshals, NFPA, etc.

### **Summary of Discussions and Actions:**

The priority voting proposal was introduced in May 2022. Thus, this item was not part of the S&T Committee’s Interim Report. Likewise, this was submitted after all regional weights and measures associations met for the 2022 standards development cycle. There will be an opportunity for each association to provide input to the NCWM Membership in July 2022.

**Western Weights and Measures Association** - not applicable

**Southern Weights and Measures Association** - not applicable

**Northeastern Weights and Measures Association** - not applicable

**Central Weights and Measures Association** - not applicable

**References:**

- [1] 2022 - NIST OWM Analysis and Final reports <https://www.nist.gov/pml/weights-and-measures/publications/owm-technical-analysis>
- [2] 1905-2021 NCWM Annual Conference reports [www.nist.gov/pml/weights-and-measures/publications/ncwm-annual-reports](http://www.nist.gov/pml/weights-and-measures/publications/ncwm-annual-reports)
- [3] National Conference on Weights and Measures (2022) Publication 15 and 16. <https://www.ncwm.com>