

CALIFORNIA DEPARTMENT OF FOOD AND AGRICULTURE
Electrical Vehicle Fueling Systems
CCR Title 4, §§ 4001 and 4002.11

November 1, 2019

FINAL STATEMENT OF REASONS

UPDATED INFORMATIVE DIGEST

Pre-existing California laws and regulations directly relating to the proposed regulation have not changed during this rulemaking activity. Modifications to the proposed text, changes to the Initial Statement of Reasons (ISOR), and any additional documents relied upon added after the publication of the Notice of Proposed Action are summarized below. As authorized by Government Code §§ 11346.9 (d) and 11347.1, the California Department of Food and Agriculture (Department) incorporates these changes in the rulemaking file.

Business and Professions Code (BPC) section 13400 is a reference for a section affected in this rulemaking.

SUMMARY OF CHANGES TO THE PROPOSED REGULATION

The Department notified the public of proposed changes to the regulation and posted them on its website for review and comment:

45-Day Public Review and Comment Period:

The 45-day public notice and comment period for this proposed regulation began on November 2, 2018, and closed at 5:00 p.m. on December 18, 2018.

The Department scheduled a public hearing on December 17, 2018, to receive oral and written testimony regarding this proposed regulation. The Department incorporates the audio recording (DMS Hearing File 12-17-18 Audio.wma) in this rulemaking file. Oral comments are outlined in meeting notes (EVSE Public Hearing Meeting Notes 2018 12-17.docx) and are also incorporated in this rulemaking file.

California law requires the Department to adopt in regulation the specifications, tolerances, and other technical requirements published in the National Institute of Standards and Technology (NIST) Handbook 44, Section 3.40. regarding devices used for commercial purposes that dispense electricity as motor vehicle fuel. Currently, those requirements are published in the handbook as “tentative code” meaning they are not enforceable by the state. This proposed rulemaking removes the tentative code status and makes other needed changes specific to California weights and measures officials, regulated businesses both large and small, and retail purchasers of electricity as motor vehicle fuel.

The First 15-Day Notice of Modifications to the Proposed Text:

The first 15-day public notice and comment period for this proposed regulation began on March 11, 2019, and closed at 5:00 p.m. on March 26, 2019.

The Department made changes to the proposed text and ISOR based on comments received during the 45-day comment period and public hearing. The changes are as follows:

UPDATE TO THE ISOR – PURPOSE AND NECESSITY

§ 4001. Exceptions.

Section 3.40., Paragraphs S.1.3.2., S.2.4.1., S.2.4.2., S.2.7., N.2., T.2., T.2.1., and UR.3.1.

The Department removes language in the current publication of NIST Handbook 44 by adding the paragraph designation to the California Code of Regulations (CCR) § 4001. The Department adds these paragraph designations to the list of exceptions in § 4001 to propose changes to them with this rulemaking. The modified language of these paragraphs is proposed in § 4002.11. The purpose and necessity for each change is explained below.

§ 4002.11. Electric Vehicle Fueling Systems.

Paragraphs A.1.1. and A.1.2.

The Department proposes changes to the text to differentiate alternating current (AC) EVSE from direct current (DC) EVSE. It is necessary to separate the implementation dates of some of the specifications, tolerances, and other technical requirements because the two device types operate differently, dispense different cycles of electricity, and many concerned stakeholders testify that DC metering technology is still being researched and developed and is not yet commercially available. Conversely, AC EVSE manufacturers claim AC metering technology is well developed and is currently installed in many electrical device applications. During this 15-day comment period the Department agrees to extend the implementation date for DC EVSE from the originally proposed date of January 1, 2020, to January 1, 2021, to provide DC EVSE manufacturers an additional year to perform any necessary retrofits, research DC metering technology, and prepare for the requirement of type approval by the Department.

Paragraph S.1.3.2.

The Department proposes to change the smallest unit of indicated delivery on the primary indicating element to be no greater than 0.0005 MJ or 0.0001 kWh. The Department is working together with an electrical component manufacturer to build state standard test

equipment to type approve, field-test, and seal EVSE. The Department has since acquired such standard test equipment. The Department determines it takes about 2-4 hours per EVSE to perform the necessary field-tests required in NIST Handbook 44 using the currently published smallest unit of indicated delivery. That manufacturer recommends the Department change the smallest unit of indication from 0.005 MJ or 0.001 kWh, as currently published in the handbook, to 0.0005 MJ or 0.0001 kWh to significantly decrease total field-test time to about 30-40 minutes per EVSE. This recommendation significantly reduces the time and personnel resources expended by county and state officials required to test and seal each EVSE in the state. This proposed change also greatly benefits EVSE owners and California consumers as it likewise significantly reduces the time the device is taken out of service and made temporarily unavailable for commercial use during the field-test period.

Paragraphs S.2.4.1., S.2.4.2., S.2.7., and UR.3.1.

Among other required marking, labeling, and method of sale requirements published in NIST Handbook 44, Section 3.40., the Department makes changes to further clarify that unit price, equipment capacity, and the indication of delivery must be, at minimum, displayed on the “face” of the device. “Face” is defined in NIST Handbook 44, Appendix D. Definitions. Business and Professions Code (BPC) § 12510 (a)(6) requires the owner of a weighing and measuring device used in retail trade to locate or position it so that its indications are accurately read by the purchaser.

Notwithstanding this requirement, the Department acknowledges NIST Handbook 44, Section 3.40., paragraph S.1.2. that provides for multiple EVSE installed at one location to have a single indicating element to display required indicating information of all EVSE at that site, i.e. one primary indicator installed at that location that displays the indicating information of all EVSE at that location. The Department also acknowledges that the requirement for indicating information to be displayed on the EVSE does not exclude the secondary use of other technological means, provided by the purchaser, to initiate a transaction and make the required indication information viewable prior to and during the transaction. But, at minimum, the owner of the EVSE must provide a primary indicating element on the EVSE and make the required indicating information readable to the purchaser. Reasons for these changes are further described below in the *Alternatives Considered* section and the Department’s response to public comments received regarding the need for a display on an EVSE.

Paragraph N.2.

The Department proposes to change the typographical error “maybe” as published in NIST Handbook 44 to “may be.” It is necessary to make this change to clarify that the National Conference on Weights and Measures (NCWM) intended for this test to be permissive in

nature and that it can be conducted during field-testing at the discretion of the state or county official. However, it is important to note that all EVSE must be manufactured to meet this test requirement because, although permissive, any county may choose to conduct the test at their discretion or upon receipt of a complaint. The Department intends to conduct this test on each EVSE model submitted for type approval.

Paragraph T.2. and Table T.2.

The Department also identifies, based on stakeholder comments, that the accuracy class requirements published in NIST Handbook 44, Section 3.40. need to be different between AC and DC EVSE. In Table T.2. Accuracy Classes and Tolerances for EVSE, the Department proposes a temporary DC EVSE accuracy class of 5.0 applicable to DC EVSE installed prior to January 1, 2021, and accuracy class 2.0 for DC EVSE installed after that date. It is necessary to propose a more lenient accuracy class for DC EVSE devices installed prior to 2021 because stakeholders' comments claim that in most cases those devices are not equipped with DC metering technology or, if they are, will not meet accuracy class 2.0 by the implementation date of 2021 as proposed in paragraph A.1.2.

The Department did not add additional documents relied upon to the rulemaking file during the first 15-day comment period.

The Second 15-Day Notice of Modifications to the Proposed Text:

The second 15-day public notice and comment period for this proposed regulation began on June 14, 2019, and closed at 5:00 p.m. on July 1, 2019.

The Department made changes to the proposed text and ISOR based on comments received during the 45-day comment period, public hearing, and the prior 15-day comment period. The changes are as follows:

UPDATE TO THE ISOR – PURPOSE AND NECESSITY

§ 4001. Exceptions.

Paragraph UR.3.1.

After further review and consideration of comments received by concerned stakeholders, the Department removes this paragraph from the list of exceptions in § 4001, making the currently published language in NIST Handbook 44 valid. The Department no longer proposes changes to this paragraph.

§ 4002.11. Electric Vehicle Fueling Systems.

Paragraphs A.1.1. and A.1.2.

The Department makes additional changes to the proposed text based on comments from multiple stakeholders requesting extensions to the implementation dates of both AC and DC EVSE. Stakeholders' comments claim that the proposed extensions in the first 15-day comment period were not enough time for the industry to make existing devices compliant. They said new devices planned to be installed during calendar years 2019 and 2020 also would not meet the proposed implementation dates. The Department agrees with stakeholders' requests and extends the AC EVSE implementation date from January 1, 2020, to January 1, 2021. For the second time, the Department extends the implementation date for DC EVSE installed prior to January 1, 2023, to comply by January 1, 2027, and DC EVSE installed after January 1, 2023, to comply upon installation. Those changes are necessary to provide additional time for manufacturers to research DC metering technology, retrofit or replace noncompliant EVSE, and prepare for the requirement of type approval by the Department.

Paragraph S.2.4.1.

The Department further clarifies that the unit price must be displayed on the face of the EVSE; notwithstanding the provision to use a single primary element to display the required information of two or more EVSE installed at one location, as mentioned above. It is necessary to make this change to emphasize that it is the EVSE owner's responsibility to provide and make readable (visible) the required indicating information to purchasers of electricity as motor vehicle fuel.

Table T.2.

Based on multiple stakeholders' comments and the proposed changes to the implementation dates in § 4002.11., paragraphs A.1.1. and A.1.2., the Department extends the accuracy class implementation timeline for DC EVSE from 2021 to 2027. This provision allows manufacturers to install DC metering technology with a greater tolerance range (errors of under-registration and over-registration) as defined in NIST Handbook 44, Appendix D. Definitions, until 2027. After that, the Department believes DC metering technology will be researched and developed enough to meet the stricter accuracy class 2.0. In the future, having a smaller tolerance allows for higher precision of delivery of electricity as motor vehicle fuel. A smaller tolerance will increase consumer confidence in the reliability of the quantity of electricity as motor vehicle fuel received by purchasers during a retail transaction.

Paragraph UR.3.1.

In reference to § 4001, paragraph UR.3.1., above, the Department also removes this paragraph from § 4002.11 because it decided not to make changes to the currently published language of this paragraph in NIST Handbook 44. It is necessary to make this change because after further review of the published language in the handbook the

Department agrees with it as published and therefore changes are no longer necessary. The Department determines indicating information must be displayed to the purchaser on the face of the EVSE or via a single primary element to display the required information of two or more EVSE installed at one location.

The Department did not add additional documents relied upon to the rulemaking file during the second 15-day comment period.

The Third 15-Day Notice of Modifications to the Proposed Text:

The third 15-day public notice and comment period for this proposed regulation began on September 17, 2019, and closed at 5:00 p.m. on October 9, 2019.

The Department makes changes to the proposed text and ISOR based on comments received during the 45-day comment period, public hearing, and prior 15-day public comment periods. The changes are as follows:

UPDATE TO THE ISOR – PURPOSE AND NECESSITY

§ 4002.11. Electric Vehicle Fueling Systems.

Paragraphs A.1.1. and A.1.2.

The Department makes additional changes to the proposed text based on comments from multiple stakeholders requesting extensions to the implementation dates of both AC and DC EVSE. Stakeholders' comments continue to claim that the proposed extensions in the first and second 15-day comment periods are still not enough time for the industry to make existing devices compliant. The Department proposes a phase-in period for AC EVSE, similar to the phase-in period for DC EVSE. For AC EVSE installed prior to January 1, 2021, the proposed implementation date is January 1, 2031, and AC EVSE installed on or after January 1, 2021, shall comply with this regulation upon installation. The Department again extends the implementation date of DC EVSE. For DC EVSE installed prior to January 1, 2023, the proposed implementation date is January 1, 2033, and DC EVSE installed on or after January 1, 2023, shall comply with this regulation upon installation. The Department believes this allows for an effective 10-year lifespan of existing EVSE, and reduces the impact of having to retrofit or replace existing devices to comply. Other grammatical changes are made to replace "must" with "shall" throughout paragraph A.1.2. to remain consistent with language and style of other California regulations.

Paragraph A.4.

The Department changes "code" to "article" to remain consistent with language and style of other California regulations. NCWM commonly refers to the requirements in NIST Handbook 44 as codes while California regulations are designated by chapters, articles, and sections.

Table T.2.

Based on multiple stakeholders’ comments and the proposed changes to the implementation dates in § 4002.11, paragraphs A.1.1. and A.1.2., the Department extends the accuracy class implementation timeline for DC EVSE to 2033. This provision allows manufacturers to install DC metering technology until 2033 with a larger tolerance. By that time, the Department expects that DC metering technology will be sufficiently developed to meet the smaller accuracy class 2.0. A smaller accuracy class requires greater accuracy of measurement of electricity as motor vehicle fuel. This will increase consumer confidence in the reliability of the quantity of fuel received.

The Department did not add additional documents relied upon to the rulemaking file during the third 15-day comment period.

ECONOMIC IMPACT ASSESSMENT

The proposed regulations will not benefit worker safety.

UPDATE OF DOCUMENTS RELIED UPON

In adopting the proposed regulation, the Department did not rely on any additional data, technical, theoretical or empirical study, or documents other than those identified in the Initial Statement of Reasons.

MANDATE ON LOCAL AGENCIES OR SCHOOL DISTRICTS

The Department determines that this proposed regulation does not impose a new mandate on local agencies or school districts. While the proposed regulation includes new device specifications and testing procedures for local government to use to test and seal EVSE, the mandate to do so is already enacted in California law and therefore, this regulation does not impose a new mandate on local government. The proposed regulation does not change local agencies’ or school districts’ responsibilities, normal business operations, or incur additional non-reimbursable costs.

ALTERNATIVES CONSIDERED

- I. The first alternative suggested by many stakeholders is to “grandfather” existing EVSE from the regulation, at least until their “useful life” expires. Stakeholders claim that making existing devices compliant is too costly and impairs industry expansion. This suggested alternative implies existing devices would be indefinitely exempt from oversight and regulation of all parts of current California law regarding commercial weighing and measuring devices as well as this proposed regulation. Consequently, those devices would not be regulated until the owner determines when it has exceeded its “useful life” and replaces the aged device. This

alternative would lessen the financial impact of this proposed regulation on EVSE manufacturers and EVSE owners, yet it creates an unfair advantage and promotes a nonuniform marketplace for purchasers of electricity as motor vehicle fuel. For the following reasons the Department rejects this alternative to “grandfather” existing EVSE:

1. EVSE are measuring devices and may be used for commercial purposes as defined in California law. Commercial weighing and measuring device laws currently enacted in BPC §§ 12500-12519 require all weighing and measuring devices used for commercial purposes to be type approved by the Department and periodically tested and sealed by state or county officials. BPC § 12500.5 makes it unlawful to sell or make use of a device used for commercial purposes that is not type approved by the Department. EVSE are not exempt from existing law. At this time, all EVSE that have been sold, installed, and placed in service have not been type approved by the Department. Consequently, these EVSE are susceptible to being removed from service by a state or county official in accordance with either BPC § 12500.10 or BPC § 12500.8 for not having a certificate of approval by the Department or a certificate of conformance by the National Type Evaluation Program (NTEP), respectively. The Department does not have authority to propose a regulation that directly conflicts with existing statute or another regulation.
2. Consumer protection and transparency of trade among all commercial transactions are paramount for the continued expansion of the EVSE industry and of California’s zero-emissions retail motor vehicle fuel industry. In the broad economy of all commodities weighed and measured for commercial purposes, there are tens of thousands of businesses in California using nearly 1.6 million commercial weighing and measuring devices. Every device is required to comply with applicable commercial weighing and measuring laws. Commercial EVSE should not be exempt from these laws. Electricity sold as retail motor vehicle fuel is merely a small subset of the existing vehicle fueling industry. As stated, the Department does not have authority to propose a regulation in conflict with existing California law and regulation.
3. 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 been given three years to design and engineer EVSE to meet the published requirements. The Department facilitated a pre-rulemaking workshop in August 2016 for this regulation that was open to the public. The Department considered all recommendations submitted as a result of the pre-rulemaking workshop when developing the proposed regulation published in the California Regulatory Notice Register in November 2018.

4. There is no consensus among stakeholders of the term “useful life” of the device. Some estimates from EVSE manufacturers range from 7-10 years, yet the term does not include a definite expiration, depreciation, or retirement time of the device; nor will a manufacturer commit to voluntarily replacing the EVSE in 7-10 years after installation. The commenters’ use of the term “useful life” implies of their own volition. In fact, one EVSE manufacturer and operator testified to the Department that if the device is still operational after 10 years, they would not replace it with a new model. Considering all circumstances, the Department believes in some cases the “useful life” may be less than 5 years and in others greater than 10 years. The Department proposed regulation includes a “useful life” of 7-10 years, until 2031 for AC or 2033 for DC EVSE.

II. Another predominant alternative proposed by stakeholders is to remove the requirement to have a primary indicating element on the EVSE, as defined in NIST Handbook 44. This alternative is contrary to California law regarding commercial weighing and measuring devices. BPC § 12510 (a)(6) requires the owner of the commercial device, not the purchaser, to position the indicating element in such a way that required indicating information is made available and can easily be read by the purchaser. Several EVSE manufacturers have designed their commercial EVSE without a primary indicating element incorporated in the device. This would require the purchaser to use a mobile device or their vehicle’s telematics and on-dash screen to view the required information. While this alternative lessens the financial impact of this proposed regulation on EVSE manufacturers and EVSE owners/operators, it transfers the responsibility to the purchaser of electricity as motor vehicle fuel. The Department does not have authority to propose a regulation in conflict with existing California law and regulation.

As stated above, in the *Addendum to the ISOR - Purpose and Necessity*, NIST Handbook 44, Section 3.40., paragraph S.1.2.1. makes provision for a single indicating element for two or more EVSEs. Also, the definition of “face” in Appendix D. Definitions recognizes the indicating element need not be an integral part of the device itself.

The Department determines that no reasonable alternative it considered or that has otherwise been identified and brought to its attention would be more effective in carrying out

the purpose for which the regulation is proposed, would be as effective and less burdensome to affected private persons than the adopted regulation, lessen the impact on small businesses, or would be more cost effective to affected private persons and equally effective in implementing the statutory policy or other provision of law. Alternatives offered by stakeholders are further explained in the following section.

SUMMARY AND RESPONSE TO COMMENTS

For ease of reference, oral comments made during the public hearing (PH) are designated with a PH prefix along with the time mark of the audio file. During the public hearing the Department received oral testimony from eight entities:

1. Ms. Hannah Goldsmith of the California Electric Transportation Coalition (CaETC), comments PH 1.1-1.4 (4:39-7:12 audio minutes);
2. Mr. Cory Bullis of Electric Vehicle Charging Association (EVCA), comments PH 2.1-2.4 (7:18-11:01 audio minutes);
3. Ms. Francesca Wahl of Tesla Inc., comments PH 3.1-3.4 (11:10-13:21 audio minutes);
4. Mr. Robert Barrosa of Electrify America, comments PH 4.1-4.4 (13:26-17:18 audio minutes);
5. Mr. Larry Hayashigawa of BTC Power, comments PH 5.1-5.5 (17:57-20:54 audio minutes);
6. Mr. Thomas Ashley of Greenlots, comments PH 6.1-6.6 (21:06-25:16 audio minutes);
7. Ms. Sara Rafalson of EVgo, comments PH 7.1-7.7 (25:30-28:15 audio minutes); and
8. Mr. Steve Bloch of ABB Inc., comments PH 8.1-8.5 (28:17-31:56 audio minutes).

The Department included a copy of each written comment received during the rulemaking process in this rulemaking file. The Department sequentially numbered each written comment for ease of reference.

During the 45-day public comment period, the Department received written comments from ten entities:

1. Ms. Hannah Goldsmith of CaETC including Mr. Jim Ross of EVCA, Ms. Katherine Stainken of Plug In America, and Mr. Terry O'Day of BTC Power on December 18, 2018, comments 1-9;
2. Ms. Francesca Wahl of Tesla, Inc. on December 15, 2018, comments 10-18;
3. Mr. Steve Bloch and Mr. Bob Stojanovic of ABB, Inc. on December 17, 2018, comments 19-25;
4. Mr. Stan Toy of Santa Clara County on December 18, 2018, comment 26;
5. Ms. Sara Rafalson of EVgo, LLC on December 18, 2018, comments 27-30;
6. Mr. Paul Glenney and Mr. Charles Watson of Hsubject, Inc. on December 18, 2018, comments 31-34;

7. Mr. Carlos Cortes and Mr. Terry O'Day of BTC Power, Inc. on December 18, 2018, comments 35-45;
8. Mr. Thomas Ashley and Mr. Erick Karlen of Greenlots on December 18, 2018, comments 46-52;
9. Mr. Anthony Harrison of ChargePoint, Inc. on December 18, 2018, comments 53-54; and
10. Mr. Matthew Nelson of Electrify America, LLC on December 18, 2018, comments 55-65.

During the first 15-day public comment period, the Department received comments from fifteen entities:

1. Mr. Steve Bloch and Mr. Bob Stojanovic of ABB, Inc. on March 26, 2019, comments 66-70;
2. Mr. Raejean Fellows and Mr. John Higham of Electric Auto Association on March 20, 2019, comments 71-73;
3. Mr. Bill Hardy of Power Measurements, Inc. on March 24, 2019, comment 74;
4. Mr. Obrie Hostetter and Mr. Charles Watson of Hsubject, Inc. on March 25, 2019, comments 75-78;
5. Mr. Marc Monbouquette of eMotorWerks on March 26, 2019, comments 79-80;
6. Mr. Kent Bullard of the public on March 26, 2019, comments 81-85;
7. Ms. Hannah Goldsmith of CalETC including Mr. Richard Schorske of EVCA, Mr. Bob Stojanovic of ABB Inc., and Mr. Terry O'Day of BTC Power on March 26, 2019, comments 86-90;
8. Ms. Francesca Wahl of Tesla, Inc. on March 26, 2019, comments 91-94;
9. Mr. Matthew Nelson of Electrify America, LLC on March 26, 2019, comments 95-104;
10. Mr. Josh Cohen of SemaConnect on March 26, 2019, comments 105-107;
11. Mr. Thomas Ashley and Mr. Erick Karlen of Greenlots on March 26, 2019, comments 108-111;
12. Ms. Sara Rafalson of EVgo, LLC on March 26, 2019, comments 112-113;
13. Mr. Craig Rodine and Mr. Alexandra Leumer of ChargePoint, Inc. on March 25, 2019, comments 114-118;
14. Mr. Kent Bullard of the public on May 13, 2019, comments 119-121; and
15. Mr. Phil Brooke of the public on March 12, 2019, comment 122.

During the second 15-day public comment period, the Department received comments from ten entities:

1. Mr. Kyle Lyons and Mr. CJ Best of EverCharge on June 21, 2019, and on July 1, 2019, comments 123-125;
2. Mr. Kent Bullard of the public on June 25, 2019, comments 126-128;
3. Mr. Jay Sohn of SIGNET EV, Inc. on June 27, 2019, comments 129-131;
4. Mr. Werner Marinelli of ABB, Inc. on June 28, 2019, comments 132-135;

5. Ms. Francesca Wahl of Tesla, Inc. on July 1, 2019, comments 136-139;
6. Mr. Matthew Nelson and Mr. Andrew Dick of Electrify America, LLC on July 1, 2019, comments 140-147;
7. Ms. Sara Rafalson of EVgo, LLC on July 1, 2019, comment 148;
8. Ms. Hannah Goldsmith of CalETC including Mr. Abdellah Cherkaoui of EVCA, Mr. Bob Stojanovic of ABB Inc. on July 1, 2019, comments 149-156;
9. Mr. Marc Monbouquette of eMotorWerks on July 1, 2019, comments 157-158; and
10. Mr. Thomas Ashley and Mr. Erick Karlen of Greenlots on July 1, 2019, comments 159-161.

During the third 15-day public comment period, the Department received comments from seven entities:

1. Ms. Ann Hope of the public on September 18, 2019, comment 162;
2. Mr. Stephen Goyette of Nuvera Fuel Cells, LLC on September 19, 2019, comments 163-169;
3. Mr. Tim Pelican and Ms. Sandy Elles of the California Agricultural Commissioners and Sealers Association (CACASA) on October 9, 2019, comments 170-171;
4. Ms. Hannah Goldsmith of CalETC including Abdellah Cherkaoui of EVCA, Asaf Nagler of ABB, Inc., and Sara Rafalson of EVgo, LLC on October 9, 2019, comments 172-175;
5. Ms. Francesca Wahl of Tesla, Inc. on October 9, 2019, comments 176-178;
6. Mr. Matthew Nelson and Mr. Tony Gonzalez of Electrify America, LLC on October 9, 2019, comments 179-184; and
7. Mr. Thomas Ashley and Mr. Josh Cohen of Greenlots on October 9, 2019, comments 185-186.

The Department considered each oral and written comment received and either responded to comments individually or grouped comments of a similar topic. The following are summarizations of public comments and the Department's responses to them:

Summary of oral comments PH 1.1, 2.1, 3.1, 5.1, 6.1, 6.2, 6.3, and written comments 1, 53-55, 74, 122, 162, 163, 165, 167, 168 and 169 (Grouped):

General (non-specific) support of the Department initiating regulations, general support of others' comments regarding the proposed text, or general support of others' recommendations to modify parts of the proposed text. This group of comments also includes any other general (non-specific) comments or questions beyond the scope of this rulemaking or comments and questions without suggestions for modifications to the text of the regulation.

Response to this group of comments:

The Department acknowledges general comments of support and any other generalized comments beyond the scope of this regulation.

The Department makes no further changes to the proposed text of this regulation.

Summary of oral comments PH 2.2, 3.2.2, 4.2, 4.3, 5.2, 7.3, 8.2, and written comments 2, 14, 27, 31, 42, 58, 70, 75, 86, 87, 95, 105, 107, 109, 112, 141 and 179 (Grouped):

This group of comments is in opposition to the metering device acceptance tolerances for DC EVSE claiming metering technology is not commercially available, field-tested, or Underwriters Laboratory (UL) approved for commercial use at this time. The commenters generally request the Department to delay accuracy tolerance requirements until such time that metering technology is available, or to fully waive the device accuracy tolerances for existing, installed DC EVSE. One commenter requests a two-year study of commercially available components prior to regulation. Other commenters request to affix a label to an existing EVSE that informs purchasers it is not compliant with this proposed regulation.

Response to this group of comments:

The Department acknowledges the commenters' concerns about DC metering technology currently not available in the marketplace. A few commenters testified that the technology is being researched and developed, yet will not be safety certified or field-tested for approximately two years from receipt of this group of comments. The Department responds in two ways:

1. The Department is mandated in BPC § 12500.5 to type approve every weighing and measuring device used for commercial purposes in the state. County weights and measures officials are mandated in BPC § 12501.1 to periodically inspect, test, and seal commercial devices in their jurisdictions. Type approval and periodic field-testing of EVSE by state and county officials includes device accuracy tolerance tests that measure the over-registration or under-registration of electricity sold as motor vehicle fuel. The Department does not have authority to exclude any device from the commercial weighing and measuring device code enacted in BPC, nor will adding a label to noncompliant EVSE be permitted. Therefore, the Department rejects commenters' requests to fully waive device accuracy tolerance test requirements and other requirements for existing DC EVSE.

2. To mitigate commenters' concerns about not having commercially available DC metering technology available at this time, the Department three times modified the proposed implementation date for DC EVSE from the originally proposed date of January 1, 2020, using a phase-in timeline that allows DC EVSE installed prior to January 1, 2023, to be compliant with this proposed regulation by January 1, 2033. For DC EVSE installed during that timeframe, the Department provides an additional seven years for manufacturers of DC EVSE metering components to fully research and develop a DC meter that can be installed and compliant with the proposed regulation.

During the public comment periods, stakeholders requested the Department to allow for a “useful life” replacement of 7-10 years. As described in the *Alternatives Considered* section, above, DC EVSE installed prior to 2023 will have reached that definition of “useful life” by 2033. The phrase implies that DC EVSE installed prior to 2023 are susceptible to voluntary, full replacement and not just retrofit. However, this proposed regulation does not directly require replacement of those EVSE.

The proposed regulation requires compliance with the proposed specifications and tolerances of EVSE. The latest proposed modifications to the regulatory text allow for normal replacement of DC EVSE that have exhausted their “useful life” by 2033. Also, with the latest modifications to the proposed regulation, DC EVSE installed after January 1, 2023, must comply with device accuracy class 5.0 tolerances upon installation. Installations in 2023 will be of the relatively newest models of DC EVSE in the marketplace. Those devices, prior to installation, will be required to be type approved by the Department and sealed by a county weights and measures official. The modifications the Department made to the text allows manufacturers to research and develop DC metering solutions for an additional three to seven years from the time this group of comments was received by the Department. Throughout this process the Department will be analyzing and collecting data regarding compliance of various manufacturers’ devices.

The Department makes no further modifications to the proposed text of this regulation.

Summary of oral comments PH 1.4, 2.3, 2.4, 3.3, 3.4, 4.3, 5.3, 6.4, 7.4, 7.5, 7.6, 8.1, 8.3, 8.4, 8.5, and written comments 3, 15, 19-25, 28-30, 32, 38, 39, 42, 44, 46-48, 52, 59, 61, 62, 69, 76, 91, 93, 94, 99, 108, 113, 132, 136, 137, 140, 148-150, 160, 161, 172, 176 and 186 (Grouped):

In addition to the above group of comments and the Department’s response (specifically for unavailability of DC metering technology) this group of comments is generally in opposition to the originally proposed implementation date of January 1, 2020, for all EVSE, for the following reasons: “Useful life” is defined by stakeholders as approximately 7-10 years; impossibility/impracticality in replacing or retrofitting EVSE by the originally proposed date; restrictions on industry progress in achieving the state’s electrification goals; public funding and rate funding are already allocated to install existing EVSE is at stake; overall excessive cost estimates to replace or retrofit EVSE; inability to comply with all proposed specifications and tolerances for type approval and field-testing; lack of manufactured components to retrofit; EVSE technician safety threats during hurried retrofits; and difficulties in abandoning non-compliant EVSE by the original implementation date. Commenters claim that an extension of the implementation dates will be a benefit to the industry. This group of comments includes all

initial and repeated requests to extend the Department's proposed implementation dates during all public comment periods.

Response to this group of comments:

In addition to the Department's response to the prior group of comments, specifically regarding DC metering, this group of comments addresses all general requests by commenters, having various reasons for their requests, to extend the implementation dates for EVSE. As explained in the prior response, the originally proposed implementation date for all EVSE is January 1, 2020. The Department acknowledged the various concerns of stakeholders and during the first 15-day public comment period proposed a modification to the dates for AC and DC EVSE. AC EVSE remains as January 1, 2020, and DC EVSE is modified to be January 1, 2021.

In response to the first 15-day comment period, commenters opposed that proposal and requested additional time extensions citing the same or similar reasons as above. Again, the Department acknowledged the concerns of stakeholders and during the second 15-day public comment period proposed extensions to the implementation dates for both AC and DC EVSE. The Department modified the AC EVSE implementation date to be January 1, 2021, and for DC EVSE installed prior to January 1, 2023, the implementation date is January 1, 2027. For DC EVSE installed after January 1, 2023, the implementation date is the date on which the device is installed. The latest modification to the proposed text provides an additional year for AC EVSE and an additional three to seven years for DC EVSE to comply. The Department believes the latest modifications to the proposed text are a reasonable compromise to allow the EVSE industry to become compliant, for state and county officials to begin oversight and regulation of EVSE used for commercial purposes, and to ensure a fair and transparent marketplace for those that purchase electricity as motor vehicle fuel in California.

Commenters supported the willingness of the Department to twice extend the implementation dates of EVSE, yet continue to oppose the dates by again requesting the Department to extend the implementation dates to 2033. Stakeholders are aware that the California Air Resources Board (CARB) is engaged in its own rulemaking process and felt the Department should extend its implementation dates to match those of CARB. However, CARB does not have authority over weighing and measuring device law in California. The Department rejects commenters' requests to extend the implementation dates of EVSE to 2033. It would be remiss of the Department to allow weighing and measuring devices used for commercial purposes to remain in service for an additional 13 years after the originally proposed implementation date, and much longer than that for those that are already existing. The Department and county weights and measures officials are mandated by the legislature to oversee and regulate the EVSE industry and to test and seal each device in the state. A 13-year extension is no longer a reasonable alternative to implementing the Department's mandates, nor does it offer a fair

marketplace for consumers in California to make transparent, value-based decisions of the purchase of electricity as motor vehicle fuel.

The Department makes no further modifications to the proposed text of this regulation.

Summary of oral comments PH 1.2, 3.2, 6.5, and written comments 8, 10-12, 49, 72, 80, 88, 92, 110, 123-125, 134, 138, 139, 151, 158, 159, 173, 177 and 185 (Grouped):

This group of comments recommends changes to or opposes the requirement for EVSE to have a primary indicating element (visual display) incorporated on the EVSE; recommends changes to or opposes the required indicating markings on the face of the EVSE; and recommends changes to or opposes certain required receipt requirements.

Many stakeholders are in opposition to the requirement to have a primary indicating element (visual display) on the EVSE. Stakeholders feel the use of other technologies such as a mobile application loaded on the purchaser's mobile device or the on-dash screen of the purchaser's electric vehicle will make transactions of electricity as motor vehicle fuel more convenient and more efficient for the purchaser. They also feel marking information on the EVSE is unnecessary as many purchasers, during a charging session, do not always stand near the EVSE to read required markings. Other stakeholders commented that some receipt information could be removed from the list of required information published in NIST Handbook 44, Section 3.40., to shorten the length of receipt information. Still other commenters want to clarify that the proposed regulation does not include a requirement for the EVSE owner to provide a paper receipt to the purchaser, maintaining that an electronic receipt would suffice.

Response to this group of comments:

The Department acknowledges this group of comments. As mentioned in the *Alternatives Considered* section of this document and the Department's responses to above comments, current California law and regulation require that commercial weighing and measuring devices be manufactured with a primary indicating element that makes required indicating information visual in a way that both the seller and the purchaser may clearly read it during the transaction. Current law requires that the owner of the commercial device comply with this requirement, and not the purchaser of the commodity. Not all the proposed requirements of this regulation are directed only toward or for the sake of the purchaser of the commodity. This regulation addresses all affected entities. To expand on the reasons explained above, the requirement for a primary indicating element to display required information, the required markings on the device, and the required receipt information are all necessary for state and county officials to perform periodic inspection and testing of the device.

CCR § 4000 adopts NIST Handbook 44 in its entirety. All commercial weighing and measuring devices must comply with Section 1.10. General Code and Appendix D. Definitions. General

Code, in support of the defined terms in Appendix D., requires the commercial device to have a visual display of required indicating information. It is important to note that the word “face” is defined in Appendix D. and does not require the EVSE’s primary indicating element to be directly integrated into the device. This language in the definition allows for the use of one primary indicating element to display the indicating information of more than one EVSE device installed at one location. The Department supports the published language and the provision of a single indicating element to display indicating information of more than one EVSE installed at one location. The Department intentionally modified the proposed text during the second 15-day comment period with the phrase “on the face of” the device to affirm the use of a single indicating element. However, if only one device is installed at a single location, the proposed regulation will require it to have a primary indicating element incorporated on its face. If the purchaser’s mobile device is considered the EVSE’s primary indicating element, it can also be argued that the mobile device is integral to the EVSE and the EVSE manufacturer or EVSE owner is responsible for the performance of the mobile device during the transaction. If the vehicle on-dash display is considered the EVSE’s primary indicating element and therefore part of the EVSE device, the EVSE manufacturer or owner must submit on-dash displays to the Department during type approval and to counties for inspection and testing. It is impractical, unfeasible, and uneconomical for EVSE manufacturers or owners/operators to require the purchaser to provide the primary indicating element to initiate a transaction and view the required indicating information.

This proposed regulation does not restrict the EVSE manufacturer or owner from utilizing additional technologies to provide a supplemental form of information to purchasers during transactions. The purchaser’s mobile device or on-dash display may be considered auxiliary or secondary indicating elements and as such the purchaser may use them to initiate and view the required indicating information prior to or during the transaction. However, the Department concludes that those devices are not considered the primary indicating element of the EVSE.

The Department rejects requests for commercial EVSE to be exempt from having a primary indicating element and makes no further modifications to the proposed regulation regarding a display, marking requirements, or receipt requirements. The Department does, however, recognize that evolving technologies may support alternative display options in the future.

Summary of oral comments PH 1.3, 4.4, 5.4, 6.6, 7.7, and written comments 9, 34, 51, 65, 78, 90, 104, 106, 111 and 121 (Grouped):

This group of comments requests the Department to coordinate with all other California government agencies that are involved in promoting and developing the zero-emission fueling industry. Those state agencies include the California Public Utilities Commission (CPUC), the California Energy Commission (CEC), and the California Air Resources Board (CARB). CARB is also in the process of developing rulemaking for EVSE regarding interoperability and

payment methods. Stakeholders request the Department to coordinate rulemaking efforts so as not to duplicate regulatory requirements, overlap enforcement authority, and align implementation dates of both proposed regulations.

Response to this group of comments:

The Department acknowledges this group of comments and agrees with them. As stated in the *Alternatives Considered* section, in 2012, NIST formed the NWUSG, an EVSE work group, that the Department was actively involved with. The general list of participating entities of this work group is listed in the *Alternatives Considered* section of this document. In 2015, NCWM adopted the national uniform standards developed by that working group and in 2016 published them as tentative code in NIST Handbook 44, Section 3.40. The Department was heavily involved in that process as well. In August 2016, the Department held a pre-rulemaking workshop for this regulation that was open to the public. Also in 2015-2016, the Department entered into an interagency agreement with CEC to research and develop standard test equipment used to type approve and field-test EVSE. During this rulemaking effort, the Department has planned and participated in multiple interagency meetings from January 2019 through current date with the above-mentioned state agencies to coordinate the Department's rulemaking efforts with theirs. At least twice, the Department has interacted with the Governor's office as part of coordinating with state agencies. The Department affirms all affected state agencies are involved with and aware of the Department's EVSE rulemaking efforts. The Department believes the latest modifications to this proposed rulemaking have been discussed with other state agencies and the Department finds it has reasonably coordinated this proposed regulation with other agencies' proposed regulations. Even though the Department's proposed implementation dates for AC and DC EVSE are not exactly aligned chronologically with CARB's implementation dates, the Department confirms that there is not immediate conflict with the differing implementation dates. As mentioned in prior responses, twice the Department extended its implementation dates to mitigate the concerns of the EVSE industry and to more closely match them with those of CARB. All other aspects and requirements of the Department's proposed regulation do not conflict or overlap with rulemaking activity of other state agencies.

The Department makes no further modifications to the proposed text of this regulation.

Summary of oral comment PH 4.1, and written comments 56, 73, 100, 145 and 182 (Grouped):

The commenters in this group claim the Department's proposed regulation, and NIST Handbook 44, Section 3.40, allows for billing the purchaser for electricity by the minute rather than by the kilowatt hour (kWh). One commenter in this group claims that the commodity being dispensed isn't kWh, it is time. And, the commenter feels that access to the energy dispensed by EVSE is what is being sold, not the energy itself. The commenter also requests that the

Department clarify that its new section on Unit Price is only applicable to charging stations subject to, and not exempt from, the regulation.

Response to this group of comments:

The Department acknowledges this group of comments and disagrees with the interpretation of the primary commodity being traded. As defined in BPC § 13400(a)(4) and (p), electricity is considered a type of motor vehicle fuel. NIST Handbook 44 makes clear what the unit of measure of electricity as motor vehicle fuel dispensed from EVSE shall be measured by – either the kWh or the megajoule (MJ). The Department concludes that the primary commodity delivered by EVSE is electricity, not parking space accessibility, parking space rental time, or accessibility to the EVSE itself. The Department considers those as “other services” of the transaction. The Department clarifies that time is not an acceptable unit of measure for dispensing and billing electricity as motor vehicle fuel. The proposed regulation allows the EVSE owner to sell electricity at no charge (free of charge) to the purchaser, but must indicate on the purchase receipt that the electricity dispensed is free of charge or billed at zero dollars per unit of measure (kWh or MJ). The proposed regulation also allows for the owner of EVSE to bill for other services included in the transaction, but those other services do not include the delivery of electricity to the vehicle as motor vehicle fuel. The other services may involve billing by time, but all other services must be disclosed to the purchaser prior to the transaction and separately itemized on the purchase receipt. The Department refers the commenter to NIST Handbook 44 paragraphs A.1., A.2., and A.3. for the application of the requirements published in Section 3.40. Electric Vehicle Fueling Systems.

The Department makes no further modifications to the proposed text of this regulation.

Summary of oral comments PH 7.1 and 7.2, and written comments 81, 120, 127 and 128 (Grouped):

The commenter makes general comments in support of parts of the proposed regulation. Specifically, the commenter supports making clear the unit of measure of electricity as motor vehicle fuel to be dispensed and sold in terms of kWh or MJ. The commenter also supports the general methodologies of load testing of EVSE.

Response to this group of comments:

The Department acknowledges the supporting comments about the unit of measure of electricity and the methodologies of load testing. The Department agrees with the supporting comment regarding the unit of measure of electricity sold as motor vehicle fuel and makes no further changes to the proposed unit of measure. Based on other comments from this commenter and other stakeholders’ comments, the Department modifies accuracy testing of DC EVSE and extends the implementation dates for all load testing requirements for both AC and DC EVSE.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 4, 33, 77, 89 and 152 (Grouped):

This group of comments recommends the Department modify the billing method compared to currently published requirements in NIST Handbook 44, Section 3.40. The commenter requests that the testing and generation of correct billing determinants (e.g. total kWh × kWh rate + time) be the proposed billing method.

Response to the above grouped comments:

The Department acknowledges these comments and rejects them because according to NIST Handbook 44, Section 3.40, the method of sale and billing method are clearly defined. The electricity measured is multiplied by the unit rate per kWh or MJ to determine the cost of electricity sold to the purchaser. Other costs for services in addition to the commodity may be assessed by the EVSE owner but must be itemized on the transaction receipt in separate line items. The separate line items of the receipt are then summed to show a subtotal for the transaction. Taxes or other fees are applied thereafter and separated by line item on the transaction receipt, as well. The method of sale and method of billing promotes uniformity with all other commercial commodities sold by count, weight, or measure in California and nationwide. The consistency of the method of sale and method of billing promotes transparency and offers a fair, value-based cost comparison for purchasers of electricity as motor vehicle fuel in California.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 5, 63, 89, 102 and 153 (Grouped):

This group of comments opposes the requirement for companies, and their technicians, that install and repair EVSE to be registered with the Department as a registered service agency (RSA) or registered service agent, respectively. One commenter is not aware of such requirement. Other commenters identify that no EVSE installation companies are registered and therefore should be exempt from the requirement. Still other commenters feel RSAs are not needed to perform an EVSE installation or repair.

Response to this group of comments:

The Department acknowledges this group of comments and rejects them because they are beyond the scope of this rulemaking effort. In fact, this proposed regulation does not require an EVSE installation or repair company to be registered with the Department as an RSA. It is California law in BPC §§ 12531-12544, inclusive, enacted in 1999 that requires companies, and their technicians, to be registered with the Department to install and repair commercial

weighing and measuring devices. In accordance with those laws, the Department will require all companies, and their technicians, that install and repair EVSE to be registered as an RSA.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 6, 89, 96, 142, 154 and 167 (Grouped):

This group of commenters supports the Department's proposed modifications to NIST Handbook 44, Section 3.40., paragraph S.3.5. and S.5.2. harmonizing the temperature ranges in those paragraphs. Commenters requested the language be further clarified to restrict EVSE testing to only the marked temperature range on the EVSE.

Response to this group of comments:

The Department acknowledges this group of comments and agrees with the commenters' support. The Department proposes this modification to align and harmonize the temperature ranges of the two paragraphs in the handbook and remove confusion among industry with which temperature range the EVSE must be manufactured to comply and be marked with. The handbook implies that the EVSE manufacturer must mark the temperature range on the EVSE if any component of the EVSE does not perform correctly within the published temperature range. If that is the case, it is the EVSE owner's responsibility to install that device in a geographical area of the state that also experiences the narrower temperature range marked on the device by the EVSE manufacturer; daily and seasonally. Conversely, that EVSE should not be installed in a geographical area of the state that normally, daily or seasonally, exceeds the narrower temperature range marked on the EVSE by the manufacturer. Therefore, testing by state or county officials will occur at the installation location at any temperature usually experienced in that region of the state, and the EVSE must operate correctly at the time and temperature that the test takes place. To further support the Department's determination, as of July 2019, the committees of NCWM have also proposed this change to the next published edition of NIST Handbook 44, Section 3.40.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comment 115:

This comment recommends the temperature ranges in NIST Handbook 44, Section 3.40., paragraphs S.3.5. and S.5.2.(e) be harmonized and reduced to -40 °C to 55 °C (-40 °F to 131 °F).

Response to this comment:

The Department acknowledges this comment and rejects it because the commenter does not provide supporting data to show that the temperature range can be narrowed for all commercial EVSE. In fact, also without any supporting data, the Department chooses to harmonize the temperature ranges published in the handbook to the broadest range published rather than the narrower until such a time that substantial data supports narrowing it. The temperature range as proposed by the Department also keeps California in harmony with the uniform national standard published in NIST Handbook 44. If in the future a preponderance of evidence shows that the temperature range may be narrowed, then at that time either NCWM or the Department may adopt the narrower range.

As stated in the prior response, it is also important to note that the proposed regulation requires EVSE to be tested in the environment it is installed in. At any time of the year its internal components must operate within the required accuracy class in that environment. This applies to the capability of the components to remain accurate while subject to the internal temperature of the EVSE, not just ambient temperature. Surroundings such as asphalt, concrete, trees, light reflecting from nearby windows, snow buildup, and the radiant energy of the material the EVSE cabinet is made of may contribute to higher or lower than ambient temperature inside the EVSE. The Department believes it is the internal temperature near the components that must meet this temperature range requirement. It may be easily possible in some very hot regions of the state for the internal temperature of the components to exceed the commenter's recommended narrower temperature range. Conversely, it is much less likely the internal temperature of the components will exceed the Department's proposed temperature range.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 7, 64, 103, 147 and 184 (Grouped):

This group of comments requests the Department to modify NIST Handbook 44, Section 3.40., paragraph S.2.3.2., inclusive, regarding loss of power to the EVSE during a transaction. The commenters are developing a battery back-up system called an "uninterruptible power supply (UPS)" that theoretically maintains power to the EVSE and continues to deliver electricity as motor vehicle fuel. They are requesting to modify the requirement to include language saying the EVSE will not terminate the transaction if a UPS is installed. The commenters refer to the publication of the Society of Automotive Engineers (SAE) J2894 as reference to power outage technology specifications.

Response to this group of comments:

The Department acknowledges this group of comments. Currently, the handbook requires an EVSE to either terminate the transaction at the time of a power loss or it may continue charging without additional authorization if the EVSE is able to determine it is still connected to

the same vehicle before and after the loss of power. In addition to the required receipt information, the receipt must clearly indicate the interruption, as described in S.2.3.2. The Department determined that EVSE battery back-up technology has not yet been thoroughly researched and developed at this time, nor is it installed in the majority of EVSE used for commercial purposes. Until more research and development are conducted, and the technology is widely used in the EVSE industry, the Department rejects the request to modify paragraph S.2.3.2. of the handbook during this rulemaking effort. As published, the handbook already accommodates all scenarios of power loss by allowing the EVSE manufacturer to design an EVSE that either terminates the transaction or is designed to recognize the same vehicle before and after the power loss and continue the transaction after power is restored. In the future, if the majority of EVSE use uninterrupted battery back-up technology it is presumed, as the name of the technology implies, that an EVSE with “uninterruptable power supply” installed will not detect or experience the effects of a power loss in the first place. If that is the correct assumption and the transaction is not terminated, the EVSE will continue to deliver electricity to the vehicle despite a power loss. All other scenarios considered by the Department provide no reason to modify the published language of the handbook.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 13, 36 and 68 (Grouped):

This group of comments opposes the currently published language of NIST Handbook 44, Section 3.40., paragraph T.2., inclusive. During the 45-day comment period, the commenter says currently manufactured EVSE devices, especially DC EVSE, will not meet the tolerances published in the handbook. The handbook requires an acceptance tolerance of 1.0 percent and a maintenance tolerance of 2.0 percent of all EVSE. The commenter requests to make tolerances for DC EVSE different from AC EVSE because the metering technologies operate differently, and DC EVSE metering technology is still in development and not commercially available at this time. The commenter is requesting to make DC EVSE less strict than AC EVSE. The commenter also requests the tolerances be defined more clearly in the handbook to include reference current, voltage, and temperature specifications. Again, during the first 15-day comment period commenters claimed that the Department’s proposed modifications were still too strict for DC EVSE, and requested still more lenient tolerances to comply. One commenter in this group requested an indefinite 5.0 percent acceptance tolerance and a 5.0 percent maintenance tolerance for all DC EVSE.

Response to this group of comments:

The Department acknowledges this group of comments and agrees, in part. The Department determines that DC metering technology is still in research and development and not commercially available that this time. It also determines that DC and AC technology operate differently. However, stakeholders claim in other comments that in approximately two years

from the time this group of comments is received by the Department a commercially available DC meter will be available. After considering this group of comments the Department modifies the proposed text to separate tolerance requirements for AC and DC EVSE. During the first 15-day comment period, the Department proposes to keep AC tolerances unchanged from what is published in the handbook, and offers two accuracy classes 5.0 and 2.0 for DC EVSE, with a one-year extension of the implementation date; from 2020 to 2021. For devices installed prior to 2021, the Department applies an accuracy tolerance of 2.5 percent and a maintenance tolerance of 5.0 percent, and after 2021 the Department applies an accuracy tolerance of 1.0 percent and a maintenance tolerance of 2.0 percent.

Based on this group of comments, during the second 15-day comment period the Department again modified the proposed text. The Department maintained the accuracy classes for AC and DC EVSE, but extended the implementation date of DC EVSE accuracy class 5.0 from 2021 to 2027. Accuracy class 2.0 applies to DC EVSE installed after January 1, 2027. The Department rejects the commenters' requests to continue to make accuracy classes more lenient because EVSE meter manufacturers claim they will be able to meet the proposed accuracy class 5.0 once their meter has been fully tested and soon made available for commercial use. Additionally, the Department rejects comments to make accuracy classes more lenient because it will potentially injure both the EVSE owner and the purchaser of electricity as motor vehicle fuel. Accuracy classes are intended to be as strict as practical so that neither the business nor the purchaser is taken advantage of during the transaction. A purchaser of electricity as motor vehicle fuel in California can be assured that the quantity of fuel paid for is the quantity delivered to the vehicle – within the specified tolerance adopted by the Department. Likewise, the business is not harmed by delivering too much electricity to the purchaser. The Department feels that modifying the accuracy classes for DC EVSE any further will increasingly promote financial harm to all affected entities in the marketplace, indirectly increase the price of electricity as motor vehicle fuel, and allow for a greater level of uncertainty of the quantity of electricity sold. The Department believes providing the industry with an additional seven years beyond the originally proposed implementation year of 2020 is more than enough time to allow EVSE meter manufacturers to design a commercial EVSE meter capable of being tested to the accuracy class 5.0 requirements. After 2027, DC metering manufacturers will be required to design a meter to meet accuracy class 2.0 and other test requirements for tolerance testing that are published in the handbook. This compromise allows for a phase-in period for the improvement of measurement accuracy of electricity as motor vehicle fuel in the marketplace so that neither the business nor the purchaser is negatively affected by the transaction.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 16-18 (Grouped):

This group of comments makes recommendations to edit specific words and remove entire paragraphs as published in NIST Handbook 44, Section 3.40. For example, the commenter requests replacing the words “deliver” or “dispense” throughout this section with “supply.” They also request to replace “fuel” with “propellent.” The commenter also requests removing paragraphs UR.2.5. and UR.3.5.

Response to this group of comments:

The Department acknowledges this group of comments and rejects the commenter’s requests to modify the published language in NIST Handbook 44. Every year NCWM holds multiple committee meetings and national conferences where entities from industry, research and development manufacturing, national and regional laboratories, and state and local governments deliberate and vote to adopt language as national uniform standards in the handbook. The purpose of having a joint national committee is to develop national uniform standards that manufacturers throughout the United States and the world can easily use to design, manufacturer, and market commercial weighing and measuring devices to the United States. It is important for interstate and international trade that California regulation remain as uniform and consistent as practical with the national uniform standards published in the handbook. Some states have legislative authority to adopt, amend, or modify the national uniform standards, yet only if necessary to meet the needs of that state. California has that authority yet only proposes changes that reflect specific needs of California. The Department considers an EVSE used for commercial purposes to be a commercial measuring device that “delivers” or “dispenses” a measured quantity of electricity to the purchaser’s vehicle to be used as motor vehicle “fuel.” All EVSE used for commercial purposes are required by California law and regulation to be type approved and periodically tested and sealed by county officials. The Department determines that the use of the words “deliver,” “dispense,” and “fuel” are national uniform terms and are clearly appropriate for a commercial device that measures and delivers electricity as retail motor vehicle fuel.

The commenter requests to remove paragraph UR.2.5. from the handbook. Based on other grouped comments and this group of comments, the Department rejects the request because it has determined that an EVSE is a commercial measuring device that requires a primary indicating element to be part of the EVSE. The Department maintains that a single primary element to display the required information of two or more EVSE installed at one location with a primary indicating element is an acceptable option to display the required indicating information of multiple EVSEs installed at one location. Especially an unattended EVSE must have required information clearly and conspicuously displayed on its face, including the other information published in this paragraph, such as the EVSE owner’s name, address, and telephone number.

The commenter requests to remove paragraph UR.3.5. regarding post-delivery requirements of the EVSE. The Department rejects the request because as with all motor vehicle fuels sold at retail, the device must not continue to operate after a transaction is complete. The commercial device should not operate again until after the required primary indicating element has been reset to zero and the vehicle connector (delivery cord and plug) is placed back to its starting position on the EVSE. Both are required triggers to reset the device and make it usable by the next purchaser. These requirements are adopted on a national level, for all fuel types, to protect purchasers from intentional and unintentional fraud and possibly from incorrect billing of prior or subsequent transactions by other purchasers using the same EVSE throughout the day. There are other scenarios that justify why one purchaser's transaction must end, the indicating information return to zero, and the chord properly replaced before another purchaser's transaction begins.

The Department makes no further modifications to the proposed text of this regulation.

Summary to written comment 26:

The commenter recommends the EVSE be designed to allow for an "Authorized Disconnection" of the device during a purchaser's fueling transaction. This feature may be used by county officials when they arrive on site to test and seal the device on a periodic basis. The commenter claims it will be inefficient and costly to have county officials wait until a transaction already in progress is complete or to leave and return later to test and seal the device. Additionally, RSAs may need to gain access to repair or service a device and may need to utilize the "Authorized Disconnection" option to provide services. The commenter explains this mode of operation allows a county official or RSA to disconnect the chord from the vehicle, interrupt the transaction, provide necessary services to the device, and resume the transaction after service.

Response to this written comment:

The Department acknowledges this comment and rejects the recommendation because, although it may sound convenient to a county official or RSA, it directly terminates or disrupts the purchaser's transaction to refuel his or her vehicle without the purchaser's consent. Additionally, the commenter does not explain under what authority a county official can interrupt or re-establish a retail transaction that is in progress, again, without the purchaser's consent. The Department believes the purchaser, whether present or not, has a reasonable expectation that after initiating the transaction the vehicle is receiving motor vehicle fuel and will not be interrupted under this circumstance; especially without consent.

If the purchaser's transaction is terminated or interrupted by a county official it may be perceived by the purchaser that he or she is restricted by a government agent from purchasing the needed quantity of motor vehicle fuel. The Department does not feel it is in the best

interest of county officials to be susceptible to this kind of public perception. More importantly, if the purchaser does not receive adequate fuel before this “Authorized Disconnection” is activated, it could potentially leave the purchaser stranded at that location until the county official or RSA has completed their necessary service to the device. If testing and sealing of the device by county officials results in the device being “incorrect,” as defined in BPC § 12500(d), and taken out of service, or if an RSA performs service that changes the metrological parameters of the device and it needs to be placed back into service by a county official, it will make that device unusable to the purchaser whose transaction was terminated or interrupted without consent. The Department believes this recommendation provides a great inconvenience and disservice to the California consumer and potentially leaves that consumer stranded without motor vehicle fuel. In the case the device is malfunctioning, the Department’s alternative protects a purchaser from potential financial harm from unknowingly initiating a transaction using an “incorrect” device that may not be delivering the correct quantity of motor vehicle fuel that is purchased. Once the device is serviced and found to be “correct,” as defined in BPC § 12500(c), it may be easily placed back in service by the official and again made available to the next retail purchaser of motor vehicle fuel.

As an alternative to this comment, the Department proposes that county officials or an RSA should easily, strategically, coordinate and plan their testing and servicing routes and dates with the owner of the EVSE and request that it be taken out of service prior their arrival and before the next possible retail transaction begins so that it is made available for planned service. This alternative is much less intrusive on a purchaser’s rights, relieves the county official of any negative public perception, and is less of an inconvenience and disservice to the California consumer. Pre-planning tests and repairs also allows county officials and RSAs to perform service immediately upon arriving at the site.

The Department makes no further modifications to the proposed text of this regulation.

Summary to written comments 35, 37, 40, 41, 43 and 45 (Grouped):

This group of comments opposes the requirement for commercial EVSE to be type approved because the commenters claim there are no published requirements for type approval of EVSE; type approval for DC EVSE with power outputs greater than 50 kWh should be fully excluded from type approval; there is not enough time to type approve all EVSE prior to the originally proposed implementation date of 2020; and it may be a multi-million dollar investment to type approve all EVSE.

Response to this group of comments:

The Department acknowledges this group of comments and rejects the commenters’ requests to exclude any commercial EVSE from being approved by the Department, or by NTEP. This request is beyond the scope of this rulemaking because it is enacted in BPC § 12500.5. It is

not within the Department's authority to amend that law. Therefore, the Department requires all non-exempt EVSE used for commercial purposes to be type approved. The purpose of this proposed regulation is to adopt the specifications, tolerances, and other technical requirements in NIST Handbook 44, Section 3.40. so they are clear, enforceable, and used by the Department to type approve all EVSE. This regulation consists of the standard requirements used to field-test EVSE. In coordination with other public comments received and with other state agencies, the Department agrees to extend the implementation dates for both AC and DC EVSE compared to the originally proposed date of 2020. During both 15-day comment periods the Department modified implementation dates for AC EVSE to have an additional year to comply with this regulation and for DC EVSE to have three to seven additional years to be compliant.

The Department makes no further modifications to the proposed text of this regulation.

Summary to written comment 50:

This commenter claims there was limited participation by EVSE manufacturers in the committees of NCWM when adopting and voting on the language published in NIST Handbook 44, Section 3.40. The commenter claims that the Division of Measurement Standards (DMS) offers more involvement from the industry, yet is still limited. The commenter is requesting a "lighter regulatory touch."

Response to this comment:

The Department acknowledges the commenters' non-specific comments. Lack of participation by industry in NCWM meetings is beyond the scope of this proposed regulation and does not specifically address the proposed changes to the regulatory text or the ISOR.

The Department is required to follow California law and regulation regarding adopting this proposed regulation pursuant to the Administrative Procedure Act (APA). The Department believes it is compliant with APA requirements for proposing and adopting this regulation.

The Department makes no further modifications to the proposed text of this regulation.

Summary to written comments 57, 101, 146 and 183 (Grouped):

This group of comments requests that the terms "workplace" and "public access" as used in the ISOR be defined in the text of the regulation. The commenter requests a change of the proposed text to read, "...primarily but not exclusively by workplace employees..." regarding EVSE that are exempted from this regulation. The commenter also requests that the phrase "for commercial purposes" be stricken from the proposed text in paragraphs A.1.1. and A.1.2.

Response to this group of comments:

The Department acknowledges this group of comments. The Department rejects these requests to modify the proposed text. The proposed text adopts the latest published language of NIST Handbook 44, Section 3.40. with amendments as needed in California. It is important for interstate and international trade that California regulation remain as uniform and consistent as practical with the national uniform standards published in the handbook. Therefore, the Department chooses not to add the phrases “workplace” or “public access” to the proposed regulation. Also, the phrases “workplace” and “public access” are not defined in California law or in the handbook. However, “commercial purposes” is a phrase defined by the legislature in BPC § 12500(e). The Department chooses to use it in this proposed regulation to harmonize it with California law. In addition to the law, NIST Handbook 44, Section 3.40., paragraph A.2. lists the only allowable exceptions of EVSE devices not required to comply with this regulation. If an EVSE meets the definition of a device used for commercial purposes in the law and is not included in the list of exceptions in paragraph A.2. then the Department requires it to comply with this regulation, be type approved, and periodically tested and sealed by county officials. Those phrases are only part of examples written in the ISOR to clarify that if an EVSE is not used for commercial purposes, is not owned, maintained, and operated by a public utility or municipality, or if the owner of the EVSE does not bill the purchaser for the amount of electricity dispensed to the vehicle, then it is a device exempt from the proposed requirements in NIST Handbook 44, Section 3.40.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 60, 98, 144 and 181 (Grouped):

This group of comments requests the Department to clarify where on the device the metering load tests take place (i.e. at the device meter, inside the charger, the charger-to-cord interface, the cord-to-vehicle interface, or elsewhere such as a device that requires a customer-supplied cord). This group of comments also requests that the estimated loss in the cord and interface with the vehicle not be included in the tolerance testing procedures and therefore not included as part of the test result.

Response to this group of comments:

The Department acknowledges this group of comments and rejects the requests to exclude the estimated loss of electricity in the cord and cord-to-vehicle interface. NIST Handbook 44, Section 3.40., paragraph N.4. clearly describes the requirement that the standard test equipment shall be connected to the device at the point where the cord connects to the vehicle and that is where the test occurs. The estimated loss of fuel via the cord as described in paragraph N.4. is to be included as part of the load test result. For an EVSE that requires a customer-supplied cord, standard test equipment shall be connected at the point the customer-supplied cord connects to the EVSE and that is where the test occurs. The purchaser of electricity as motor vehicle fuel has reasonable expectation that the accuracy of the meter is

within tolerance and the quantity of fuel measured by the meter is accurately delivered to the vehicle. It is the responsibility of the EVSE manufacturer and EVSE owner to ensure the measurement of fuel purchased is accurate, is delivered to the purchaser's vehicle, and the estimated loss in the cord and cord-to-vehicle interface should not be significant enough to cause financial harm to the purchaser or exceed test specifications.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 66, 67 and 132 (Grouped):

The commenter claims DC EVSE operating at 1000-volts cannot meet accuracy class 2.0 – 1.0 percent acceptance tolerance when the device is under a low load test of less than 10 percent maximum deliverable amperes (MDA) current. The commenter also recommends modifying this test range to be conducted at greater than 85 percent MDA current for the high-load test and at 50 percent MDA current for the light-load test. The commenter feels that during much of the time the device is operating, it ranges in power output capability from 50 percent MDA current to 85 percent MDA current. The commenter provided a data chart called "Charge Curves" comparing vehicle battery capacity versus power output capacity to support this comment. Another commenter asks to clarify the test parameters for high- and low-load tests.

Response to this group of comments:

The Department acknowledges this group and comments and modifies the proposed text to differentiate tolerance tests of AC EVSE from DC EVSE. For all DC EVSE installed prior to 2027, the Department proposes to apply accuracy class 5.0. For DC EVSE installed after 2027, the Department proposes to revert the DC EVSE accuracy class 5.0 to accuracy class 2.0. The Department believes its modification to the proposed text offers enough leniency that existing or retrofitted DC metering technology can be enforced by state and county officials in the next seven years while allowing manufacturers of DC meters to research and develop one that meets accuracy class 2.0.

The Department rejects the request to modify the accuracy tolerance tests any further from what is currently proposed. Although the Department agrees with the commenter that most of the time the device operates between less than 85 percent MDA current and greater than 50 percent MDA current, that range is too narrow and not representative of all the possible power supply capabilities of the device. The Department used the commenter's data chart to observe that once some vehicles' batteries exceed a 75 percent capacity charge the DC EVSE reduces its power output to less than 50 percent MDA current (e.g., less than 25 kW for a 50 kW DC EVSE). Depending on how long the purchaser leaves the vehicle connected to the DC EVSE, the device will continue to deliver electricity along a pre-programmed, declining power output curve that is dependent on the make and model of the vehicle. The DC EVSE continues to

“trickle charge” the vehicle’s battery even after the battery exceeds a 90 percent capacity charge. Especially during that time, the power output of the device is much below 50 percent MDA current, and more closely approaches 10-15 percent MDA current as visually extrapolated from the curves on the chart (see comment 67). However, it should be noted that the chart does not include the visually extrapolated slopes of data of any reported vehicle battery type beyond a 90 percent capacity charge. Until more data is made available, the Department determines that EVSE should be tested to the greatest possible range of power output capability the device is designed to operate in. The Department also believes it is important for interstate and international trade that California regulation remain as uniform and consistent as practical with the national uniform standards published in the handbook. The high- and low-load tests will be tested within the manufacturer’s posted temperature range and the device’s rated voltage and current. The standard test equipment used by state and county officials is certified by the state metrology laboratory, or another accredited national metrological laboratory, to a much higher level than the EVSE that is being tested. The Department will keep proof of certification for each piece of standard test equipment that is in use.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 71, 119, 133, 155, 164, and 174 (Grouped):

This group of commenters opposes or questions the reasoning for the Department’s modification of NIST Handbook 44, Section 3.40., paragraph S.1.3.2., making the smallest indication value to be no greater than 0.0005 MJ or 0.0001 kWh, claiming it is not beneficial to the purchaser and may be a point of confusion to that person. One commenter claimed 2-3 decimal places is optimal, 4 is confusing; gasoline pumps only have three decimal places; and greater than two decimal places is financially equivalent to three or more.

Response to this group of comments:

The Department acknowledges this group of comments and does not disagree that from a consumer’s perspective the smallest unit of indication will not be significant, financially or metrologically, and may be confusing. However, the purchaser’s transaction will remain nearly the same regardless how many additional decimal places are added, beyond three, to the quantity value of measured electricity. The Department made this change to the proposed text to benefit both the EVSE owner and county officials required to periodically test and seal the device. The Department determines that if the smallest indicated unit remains as published in the handbook, it will take about 2-4 hours per EVSE to complete the required tests to determine if it is “correct,” as defined in BPC § 12500(c). During that time the EVSE is taken out of service and cannot be used to sell electricity as motor vehicle fuel. This downtime reduces potential income for the owner of the EVSE and increases total time spent by a county official to test and seal each EVSE. Conversely, if the smallest unit of indication is set to

0.0005 MJ or 0.0001 kWh the total testing time drops to about 20-40 minutes to complete required tests and determine device compliance. Significantly reducing the total test time for each EVSE streamlines the testing process, thereby optimizing potential income of the owner of the device. It also makes the workload of a county official much more efficient. Again, the purchaser is not harmed by the Department requiring a more precise indication of measured quantity of electricity as motor vehicle fuel. To further support the Department's determination, as of July 2019, the committees of NCWM have also proposed this change to the next published edition of NIST Handbook 44, Section 3.40.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 79 and 167 (Grouped):

This commenter requests that the Department make a grammatical modification to the paragraph headers of NIST Handbook 44, Section 3.40., paragraphs S.2.4. and S.2.4.2. The commenter notices the headers read, "...Type of Voltage." Yet, the body of paragraph S.2.4.2. reads, "...and type of current..." The examples in the paragraph refer to the cycle (type of current) of electricity (e.g., AC current versus DC current). The commenter suggests changing the headers to match the body of the paragraph. The commenter also requests that the requirement to specify the posted maximum power capacity be marked with a higher degree of precision (e.g., 9.6 kW not 10 kW).

Response to this comment:

The Department acknowledges this comment and agrees that there may be possible confusion between the headers of the paragraphs and the body of paragraph S.2.4.2. The Department also detects the similar phrase regarding receipt information in paragraphs S.2.6. and UR.3.3. that read, "...and type of current..." While the Department agrees that there may be the potential to modify the headers of the handbook in the future, the Department chooses not to make these changes using this rulemaking activity. The Department believes that it can appropriately address this need using NCWM's established process to amend language of NIST Handbook 44. The Department determines that regardless of the paragraph headers the requirements written in the body of the paragraphs are clear and accurately describe that intended information must be displayed on the EVSE and on the purchase receipt. These modifications to the headers are therefore considered non-substantive modifications and will not change the requirements or the intent of the proposed regulation. None the less, the Department still chooses to coordinate with NCWM and confer with their committees that there is justified reason to modify the headers and to confirm that the use of the phrase "...type of voltage..." in the headers is in fact intending to be the "...type of current..." of the EVSE.

The Department makes no further modifications to the proposed text of this regulation.

Summary to written comments 82 and 83 (Grouped):

This group of comments asks the Department questions but makes no specific suggestions or recommendations to change the proposed text of the regulation or the ISOR. The commenter asks if the Department has additional provisions than those proposed in such a case that the Department and county officials do not have procedures for type approving and periodically testing and sealing EVSE by the time the regulation becomes effective.

Response to this group of comments:

The Department acknowledges this group of questions. The Department has acquired and is currently developing field-test procedures for AC and DC EVSE. The Department will have these tasks completed prior to the implementation dates of this regulation. During this rulemaking the Department extended the implementation dates three times for both AC and DC EVSE based on the industry's many requests.

The Department makes no further modifications to the proposed text of this regulation.

Summary to written comment 84:

This comment suggests that the Department notify electrical contractors, other companies, and individuals who install and maintain EVSE, that the Department requires them to be registered as an RSA if they want to continue to perform that type of service. The commenter asks the Department if C10 Electricians will also be required to be an RSA.

Response to this comment:

The Department acknowledges this comment. After this proposed regulation is adopted the Department intends on reaching out to various companies that employ technicians that install, maintain, and repair EVSE to inform them that they are required to be registered with the Department to perform those services. The C10 Electrician license is administered and issued by the California Contractors State License Board. That state board has its own requirements that contractors must comply with to receive that license. There are no exemptions in California law removing responsibility from a company or individual from only complying with one or the other of the two state agencies' requirements. For that matter, a company or individual that installs, maintains, or repairs EVSE must comply with all state agencies' requirements that apply to their services. Therefore, the Department determines that regardless of whether a company or individual has a C 10 Electrician license, they are still required to be registered as an RSA to perform work on an EVSE.

The Department makes no further modifications to the proposed text of this regulation.

Summary to written comment 85:

The commenter requests the Department to clarify the exemptions of EVSE. Specifically, the commenter asks the Department why a particular county feels that an EVSE owned by a city in its jurisdiction is required to be tested and sealed by that county.

Response to this comment:

The Department acknowledges this comment. As mentioned in the ISOR, the California State Attorney General decided in Opinion No. SO 77-13 – November 22, 1977, that state and county weights and measures officials do not have authority over commercially used devices owned by public entities, e.g. municipalities, special districts and California higher education institutions because they are not people as defined in BPC § 12011. That decision also supports the notion that the public utility or municipality must own, maintain, and operate the commercial device in order to be exempt from state or county requirements.

Regarding the exceptions in NIST Handbook 44, Section 3.40., paragraph A.2., the Department rejects the request to modify that paragraph because the language of A.2.(a) says the public utility or municipality must own, maintain, and use the device to make it exempt. The terms “use,” “user,” and “user requirements” in context of the handbook refer to the entity that installs, maintains, and operates the device. The description of some of those terms is found in part D. of the Introduction and Appendix D. Definitions of the NIST Handbook 44. In other words, if a public utility or municipality wholly owns, installs, maintains, and operates the device (i.e., the entity bills the purchaser for the electricity dispensed by the device), then that device is not required to comply with this regulation. However, often a public utility or municipality owns the device but utilizes the services of a third-party company to maintain and operate the device (i.e., bills the purchaser). In this case, the third-party is considered the user (operator) and therefore that device is subject to the requirements of this proposed regulation even though it is owned by a public utility or municipality.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comment 97, 143, and 180 (Grouped):

This group of comments asks the Department if the data collected by the EVSE needs to be locally stored on the EVSE. The commenters ask the Department to clarify the test period and who is responsible for testing the device.

Response to this comment:

The Department acknowledges this comment. The EVSE manufacturer, owner, and operator must comply with all parts of NIST Handbook 44, Section 3.40., paragraph S.3.4. The handbook does not require the data be locally stored on the device, provided the device does not alter the information and makes it accessible pursuant to paragraph S.3.4.(a). If the required information is stored remotely (i.e., at the operator’s place of business) the owner and

operator of the EVSE must ensure they comply with paragraph S.3.4.(b) when sending required data to the EVSE to be displayed at the request of a state or county official during testing.

Commercial weighing and measuring devices are periodically tested and sealed by state or county weights and measures officials. Each type of device is tested periodically pursuant to BPC §§ 12212 and 12240 and CCR § 4070. After adoption of this proposed regulation the Department will coordinate with county officials to establish a reasonable test period for EVSE.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comment 114, 117, 126, 170 and 171 (Grouped):

The commenters oppose the Department's decision to three times extend the implementation dates of both AC and DC EVSE. One commenter, a manufacturer of EVSE, disagrees that DC EVSE metering technology is not commercially available now. Despite other comments received by the Department claiming DC EVSE metering technology is not currently available, the commenter claims that a delay in implementation is not needed for AC or DC EVSE. That commenter also opposes the Department's proposed accuracy class 5.0 for DC EVSE claiming it, too, is not necessary. That manufacturer claims they make a DC EVSE that is already compliant with accuracy class 2.0. The other commenter, a member of the public and an electric vehicle advocate, claims that from the point of view of a consumer, the extensions of the implementation dates for both AC and DC EVSE are too long. This group of commenters also feels the Department cannot enforce the proposed regulation until after the effective dates. The time extensions delay enforcement action against noncompliant EVSE, and therefore create an unfair business advantage that may potentially cause consumer harm. County officials would be extremely limited in ability to protect consumer interest or respond to consumer complaints. County officials have no way to differentiate and track devices subject to inspection from those that are not. This group of commenters prefers either the Department's original implementation date of January 1, 2020, for all EVSE, or no later than January 1, 2023, for AC EVSE and January 1, 2025, for DC EVSE.

Response to this group of comments:

The Department acknowledges this group of comments. In proposing a regulation, the Department considers all affected entities to determine the practicality of reasonable compliance with the regulation and its financial impact on the affected groups. The Department believes that even though one manufacturer may feel DC EVSE metering technology is currently commercially available, most manufacturers claim it is not. The Department also considers the investments of some manufacturers and owners that have already installed several EVSE and may need to retrofit or replace some of them to be compliant with the proposed regulation. In no way does this proposed regulation prohibit an EVSE manufacturer

from submitting its EVSE models to the Department for type approval prior to the implementation dates; especially once the Department adopts this proposed regulation and finalizes the development of standard test equipment and EVSE test procedures.

The Department only partially agrees with the comments that there will be a delay in enforcement action by the Department. The current proposal becomes effective in 2021 for AC EVSE installed after January 1 of that year, and effective in 2023 for DC EVSE installed after January 1 of that year. Only existing devices installed prior to the proposed effective dates, respectively, will experience a phase-in of these requirements. The proposed language also does not restrict an EVSE manufacturer from making its existing devices compliant any sooner than the proposed implementation dates. The Department maintains authority in accordance with California law to supervise and enforce all commercial weighing and measuring devices in the state. While it may be true that not all enforcement actions available to the Department will be used prior to the proposed implementation dates, the Department continues to have authority over the EVSE industry and may take enforcement action and other corrective actions against noncompliant devices as necessary to ensure a fair and competitive marketplace and to protect California consumers that purchase electricity as motor vehicle fuel.

The Department proposes a more lenient, temporary accuracy class 5.0 for DC EVSE because the Department received many comments from DC EVSE manufacturers claiming most DC EVSE devices, especially the latest high-power 350 kW devices that are still being researched and developed, cannot meet the tolerances of accuracy class 2.0. Those commenters also claimed that the stricter accuracy class may potentially cause currently installed devices to be taken out of service if required to meet accuracy class 2.0. They also claim the EVSE industry will be negatively affected by such a requirement. The Department agrees with those commenters and proposes accuracy class 5.0 be applied to DC EVSE installed prior to 2033. After January 1, 2033, the Department will revert to accuracy class 2.0 for new installations of DC EVSE henceforth. This proposal provides this kind of phase-in period to allow the industry to research and develop new DC metering technology capable of meeting accuracy class 2.0. It also allows for more economical attrition of aging devices beyond their “useful life” of 7-10 years, as defined by other commenters.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 116, 135 and 156 (Grouped):

This group of commenters requests to keep the start load test reference value a constant value but be reduced in amperes, or that it be changed from a constant value to a percent of maximum rated current.

Response to this group of comments:

The Department acknowledges this group of comments and rejects the requests to change the start load test requirements. The start load test is a permissive test as stated in NIST Handbook 44, Section 3.40., paragraph N.2. The intent of the start load test is to determine if the standard test equipment registers (detects) a load when a minimal rated voltage and the reference amperes is applied to the EVSE. Paragraph T.6. sets a constant test reference value of 0.5 amperes to the start load test. That is not to say that that EVSE is prohibited from registering a load with less amperes applied to it, but when a minimal load is applied of at least 0.5 amperes it shall register a load on the standard test equipment. And, most definitely the EVSE shall register a load on standard test equipment when a current greater than 0.5 the reference value be fixed at 0.1 amperes for type approval and but a higher reference value for field-testing. However, the commenter does not recommend what the reference value should be during field-testing. This commenter does not provide data to support the request of decreasing the reference value or show that the requested reference value is practical and reasonable to type approve and field-test all types of AC and DC EVSE. While the recommended reference value of 0.1 amperes may apply to AC EVSE, it may be impractical for DC EVSE; especially high-powered DC EVSE. The Department determines there is no known benefit to decreasing the reference value of the start load test with this rulemaking.

The Department does not believe that the start load test reference value should be a percent of the maximum current of the device. One commenter, an EVSE component manufacturer and builder of EVSE, provided compelling data for start load test standard specifications adopted in Europe (Germany) for AC, DC, and Class A meters. Those European standard specifications set the start load current at 0.003 percent of total rated current. This commenter provides an example that the DC meter they are developing has a rated current of 500 amperes and is designed to have a start load current of 1.5 amperes. This commenter feels it is too difficult and too expensive to design a high-power DC EVSE meter with a start load as low as 0.5 amperes. Although that may be the case with some high-power EVSE designs, the Department believes it is not practical to apply the same percent reference value to all commercial AC or DC EVSE when some commercial models have a rated current of only 30 amperes (or less). Using the same percent reference value of 0.003 percent, that device would have to register a start load test on standard test equipment of 0.09 amperes (or less). The commenter does not provide data to confirm whether all commercial AC EVSE can register a start load of 0.09 amperes (or less). This value is already less than the value the other commenter in this group recommends of 0.1 amperes.

The Department determines that better coordination among AC and DC EVSE manufacturers, general concurrence on what the reference value should be modified to, and more data to support those recommendations is needed to support a statewide or nationwide change in the proposed reference value for the start load test. If additional data for all commercial models of

EVSE is presented after this rulemaking, the committees of NCWM or the Department may determine that modification of the published reference value is beneficial to all affected entities.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 118 and 157 (Grouped):

This group of comments opposes any proposal to lessen or remove the primary indication display requirements. The commenters feel EVSE must have a display to be used commercially. They also feel a display is necessary to fulfil the proposed CARB regulation that, if adopted as currently proposed, will require a card reader to be installed in EVSE used for commercial purposes.

Response to this group of comments:

The Department acknowledges this group of comments and agrees with them. The Department determines that a primary indicating element (visual display) is a required component of commercial EVSE, and the manufacturer and operator of the device is required to provide the visual display for the purchaser to view required indicating information. During the second 15-day comment period the Department modified the proposed text of the regulation to clarify that a visual display is necessary on “the face” of the device. EVSE without a display will be required to install one by the required implementation date of that device type. As stated in other responses, it is acceptable for EVSE manufacturers to design a single primary element to display the required information of two or more EVSE installed at one location.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comments 129-132 (Grouped):

The commenters ask the Department to answer three similar kinds of questions:

1. Do DC EVSE installed during 2019 and 2020 need to satisfy the proposed requirements of this regulation?
2. Do DC EVSE need to satisfy only the 5 percent maintenance tolerance?
3. When will NIST Handbook 44 be officially published?

Response to this group of comments:

The Department acknowledges this group of comments and agrees to answer the above questions. None of the questions suggest modifications to the proposed text of the regulation or the ISOR. The Department’s answers are as follows:

1. DC EVSE installed prior to 2023 must comply with the proposed regulation after it is adopted in regulation and no later than January 1, 2033. Soon the Department will be

prepared to accept applications for type approval of DC EVSE. However, these devices must comply with the regulation by January 1, 2033. DC EVSE installed on or after January 1, 2023, must comply upon installation.

2. Each accuracy class has an acceptance tolerance applied during type approval and initial installation of the device. A maintenance tolerance is applied during periodic field-testing and sealing thereafter. A manufacturer of DC EVSE may permissively submit a device to the Department for type approval prior to 2023. The Department will type approve that device with accuracy class 5.0 – 2.5 percent acceptance tolerance. After January 1, 2023, and until 2033, a manufacturer will be required by this regulation to submit a DC EVSE model to the Department to be type approved prior to installation. That device must also comply with accuracy class 5.0. For a DC EVSE device installed after January 1, 2033, the Department will require it to be submitted for type approval with accuracy class 2.0 – 1.0 percent acceptance tolerance. AC EVSE installed prior to January 1, 2021, must comply with the proposed regulation after it is adopted and no later than January 1, 2031. The implementation date for AC EVSE installed on or after January 1, 2021, is the date when the device is installed. Likewise, AC EVSE manufacturers may permissively submit their device to the Department for approval before 2021.
3. NIST publishes a new edition of NIST Handbook 44 once per year. NCWM has not yet removed the tentative code status of Section 3.40. Once NCWM agrees to remove the tentative code status of that section it will become an enforceable national uniform standard. The Department is proposing to adopt this regulation to remove the tentative code status of Section 3.40. and make its requirements enforceable in California until such a time that NCWM removes that status. The requirements of that section will be enforceable in California once it is adopted and included in the California Code of Regulations. The proposed implementation dates are set so the EVSE industry understands when they must comply with the proposed requirements in regulation.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comment 166:

The commenter claims that one-tenth of a cent indication for the smallest unit of monetary measure (method of sale) is not an official monetary unit and misleads people.

Response to this comment:

The one-tenth of one cent indication is optional and is consistent with method of sale requirements published in NIST Handbook 130 Uniform Regulations for the Method of Sale of Commodities and supports uniformity across multiple state jurisdictions.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comment 175:

The commenter requests post-rulemaking workshops to discuss implementation of the requirements of this regulation.

Response to this comment:

At various times throughout the rulemaking process the Department conducted meetings with other state agencies, EVES manufacturers, EVSE owners, and other interested stakeholders to discuss methods of compliance with the proposed regulation. The Department will continue to conduct meetings with interested stakeholders as needed.

The Department makes no further modifications to the proposed text of this regulation.

Summary of written comment 178:

One commenter commented that a primary indicating element may be a mobile device utilizing a mobile application similar to the national standard code published as “tentative code” in NIST Handbook 44, Section 5.60. Transportation Network Measurement Systems – Tentative Code, paragraphs S.1. and S.1.1.

Response to this comment:

NIST Handbook 44, Section 5.60. is “tentative code” and is therefore not fully enforceable by state or county officials in California. The Transportation Network Measurement System (TNMS) is not a motor vehicle fueling service nor are the Transportation Network Companies (e.g., Uber, Lyft) in any manner involved in the retail sale of motor vehicle fuels. As such, current California statute and regulation regarding the sale of motor vehicle fuels, specifically the provision of a primary indicating element on a commercial measuring device, remains in effect. California statute and regulations assert that the responsibility of providing required indicating information and making it readable to the purchaser is wholly on the owner of the EVSE – not the purchaser. The definition in NIST Handbook 44, Appendix D. Definitions. of “primary indicating or recording element” includes a statement that the primary indicating element is, “...designed to, or may, be used by the operator in the normal commercial use of a device.” The purchaser’s mobile device is not owned, used, or maintained by the EVSE owner so would not qualify as a primary indicating element of the EVSE charging system. It’s important to note that this proposed regulation does not restrict the purchaser from using a mobile device to initiate a transaction and view required indicating information, however it is considered an auxiliary or secondary indicating element as defined by the aforementioned definition.

The Department makes no further modifications to the proposed text of this regulation.