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DEPARTMENT OF ENERGY

10 CFR Part 431

[EERE–2017–BT–TP–0053]

RIN 1904–AE17

Energy Conservation Program: Test Procedure for Metal Halide Lamp Fixtures

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Final rule.

SUMMARY: In this final rule, the U.S. Department of Energy (''DOE'') is adopting amendments to its test procedure for metal halide lamp fixtures (''MHLFs'') to incorporate by reference new relevant industry standards as well as update to latest versions of existing references; clarify the selection of reference lamps used for testing; specify the light output level at which to test dimming ballasts; revise definitions and reorganize the content of the test procedure for better readability and clarity; and revise the standby mode test method for MHLFs.

DATES: The effective date of this rule is July 25, 2022. The final rule changes will be mandatory for product testing starting December 21, 2022. The incorporation by reference of certain material listed in this rule is approved by the Director of the Federal Register on July 25, 2022.

ADDRESSES: The docket, which includes **Federal Register** documents, public meeting attendee lists and transcripts, comments, and other supporting documents/materials, is available for review at *www.regulations.gov.* All documents in the docket are listed in the *www.regulations.gov* index. However, some documents listed in the index, such as those containing information that is exempt from public disclosure, may not be publicly available.

A link to the docket web page can be found at *www.regulations.gov/docket/EERE–2017–BT–TP–0053.* The docket web page contains instructions on how to access all documents, including public comments, in the docket.

For further information on how to review the docket contact the Appliance and Equipment Standards Program staff at (202) 287–1445 or by email: *ApplianceStandardsQuestions@ee.doe.gov.*

FOR FURTHER INFORMATION CONTACT:

Dr. Stephanie Johnson, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE–5B, 1000 Independence Avenue SW, Washington, DC, 20585–0121. Telephone: (202) 287–1943. Email: *ApplianceStandardsQuestions@ee.doe.gov.*

Ms. Jennifer Tiedeman, U.S. Department of Energy, Office of the General Counsel, GC–33, 1000 Independence Avenue SW, Washington, DC, 20585–0121. Telephone: (202) 287–6111. Email: *Jennifer.Tiedeman@Hq.Doe.Gov.*

SUPPLEMENTARY INFORMATION:

DOE maintains previously approved incorporations by reference and incorporates by reference the following industry standards into 10 CFR part 431:

American National Standards Institute (''ANSI'') C78.43 (ANSI C78.43–2017), ''American National Standard for Electric Lamps—Single-Ended Metal Halide Lamps,'' approved December 21, 2017.

ANSI C78.44 (ANSI C78.44–2016), ''American National Standard for Electric Lamps—Double-Ended Metal Halide Lamps,'' approved July 1, 2016.

ANSI C82.6–2015 (R2020) (ANSI C82.6–2015 (R2020)), ''American National Standard for Lamp Ballasts—Ballasts for High-Intensity Discharge Lamps—Methods of Measurement,'' approved March 30, 2020.

ANSI C82.9 (ANSI C82.9–2016), ''American National Standard for Lamp Ballasts— High-Intensity Discharge and Low-Pressure Sodium Lamps—Definitions,'' approved July 12, 2016.

International Electrotechnical Commission (''IEC'') 63103 (IEC 63103), ''Lighting Equipment—Non-Active Mode Power Measurement'' (Edition 1.0, 2020–07).

Copies of ANSI C78.43–2017, ANSI C78.44–2016, ANSI C82.6–2015 (R2020), and ANSI C82.9–2016 are available at *www.ansi.org* or *www.nema.org.* Copies of IEC 63103:2020 are available on IEC's website at *http://webstore.ansi.org.*

For a further discussion of these standards, see section IV.N of this document.

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I. Authority and Background

MHLFs are included in the list of ''covered products'' for which the U.S. Department of Energy (''DOE'') is authorized to establish and amend energy conservation standards and test procedures. (42 U.S.C. 6295(a)(19)) DOE's energy conservation standards and test procedures for MHLFs are currently prescribed at 10 CFR 431.326 and 10 CFR 431.324, respectively. The

following sections discuss DOE's authority to establish test procedures for MHLFs and relevant background information regarding DOE's consideration of test procedures for this equipment.

A. Authority

The Energy Policy and Conservation Act, as amended (''EPCA''),[1] authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. (42 U.S.C. 6291–6317) Title III, Part B [2] of EPCA established the Energy Conservation Program for Consumer Products Other Than Automobiles, which sets forth a variety of provisions designed to improve energy efficiency. These products include MHLFs, the subject of this document.[3] (42 U.S.C. 6292(a)(19) MHLFs contain metal halide lamp ballasts. Because the MHLF energy conservation standards in EPCA established a minimum efficiency for the ballasts incorporated into those fixtures, the test procedure requires measurement of metal halide lamp ballast efficiency. (42 U.S.C. 6295(hh)(1)(A))

The energy conservation program under EPCA consists essentially of four parts: (1) testing, (2) labeling, (3) Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of EPCA specifically include definitions (42 U.S.C. 6291), test procedures (42 U.S.C. 6293), labeling provisions (42 U.S.C. 6294), energy conservation standards (42 U.S.C. 6295), and the authority to require information and reports from manufacturers (42 U.S.C. 6296).

The testing requirements consist of test procedures that manufacturers of covered products must use as the basis for (1) certifying to DOE that their products comply with the applicable energy conservation standards adopted under EPCA (42 U.S.C. 6295(s)), and (2) making other representations about the efficiency of those products (42 U.S.C. 6293(c)). Similarly, DOE must use these test procedures to determine whether the products comply with any relevant standards promulgated under EPCA. (42 U.S.C. 6295(s))

Federal energy efficiency requirements for covered products established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6297) DOE may, however, grant waivers of Federal preemption for particular State laws or regulations, in accordance with the procedures and other provisions of EPCA. (42 U.S.C. 6297(d))

Under 42 U.S.C. 6293, EPCA sets forth the criteria and procedures DOE must follow when prescribing or amending test procedures for covered products. EPCA requires that any test procedures prescribed or amended under this section shall be reasonably designed to produce test results which measure energy efficiency, energy use or estimated annual operating cost of a covered product during a representative average use cycle (as determined by the Secretary) or period of use and shall not be unduly burdensome to conduct. (42 U.S.C. 6293(b)(3))

EPCA sets forth that test procedures for metal halide lamp ballasts shall be based on ANSI C82.6–2005.[4] (42 U.S.C. 6293(b)(18))

EPCA also requires that, at least once every 7 years, DOE evaluate test procedures for each type of covered product, including MHLFs, to determine whether amended test procedures would more accurately or fully comply with the requirements for the test procedures to not be unduly burdensome to conduct and be reasonably designed to produce test results that reflect energy efficiency, energy use, and estimated operating costs during a representative average use cycle or period of use. (42 U.S.C. 6293(b)(1)(A))

If the Secretary determines, on her own behalf or in response to a petition by any interested person, that a test procedure should be prescribed or amended, the Secretary shall promptly publish in the **Federal Register** proposed test procedures and afford interested persons an opportunity to present oral and written data, views, and arguments with respect to such procedures. The comment period on a proposed rule to amend a test procedure shall be at least 60 days and may not exceed 270 days. In prescribing or amending a test procedure, the Secretary shall take into account such information as the Secretary determines relevant to such procedure, including technological developments relating to energy use or energy efficiency of the type (or class) of covered products involved. (42 U.S.C. 6293(b)(2)). If DOE determines that test procedure revisions are not appropriate, DOE must publish its determination not to amend the test procedures.

In addition, EPCA requires that DOE amend its test procedures for all covered products to integrate measures of standby mode and off mode energy consumption into the overall energy efficiency, energy consumption, or other energy descriptor, unless the current test procedure already incorporates the standby mode and off mode energy consumption, or if such integration is technically infeasible. (42 U.S.C. 6295(gg)(2)(A)) If an integrated test procedure is technically infeasible, DOE must prescribe separate standby mode and off mode energy use test procedures for the covered product, if a separate test is technically feasible. (*Id.*) Any such amendment must consider the most current versions of the International Electrotechnical Commission (''IEC'') Standard 62301 [5] and IEC Standard 62087 [6] as applicable. (42 U.S.C. 6295(gg)(2)(A))

DOE is publishing this final rule in satisfaction of the 7-year review requirement specified in EPCA. (42 U.S.C. 6293(b)(1)(A))

B. Background

DOE's existing test procedure for MHLFs is codified at Title 10 of the Code of Federal Regulations (''CFR'') part 431, subpart S, § 431.324 (''Uniform test method for the measurement of energy efficiency and standby mode energy consumption of metal halide lamp ballasts'').

The Energy Independence and Security Act of 2007 (Pub. L. 110–140; EISA 2007) amended EPCA, requiring DOE to establish test procedures for metal halide lamp ballasts based on the industry standard ANSI C82.6–2005. (42 U.S.C. 6293(b)(18)) On March 9, 2010, DOE published a final rule establishing active mode and standby mode test

[1] All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Pub. L. 116–260 (Dec. 27, 2020), which reflect the last statutory amendments that impact Parts A and A–1 of EPCA.

[2] For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.

[3] Because of its placement in Part A of Title III of EPCA, the rulemaking for MHLFs is bound by the requirements of 42 U.S.C. 6292. However, because MHLFs are generally considered commercial equipment, as a matter of administrative convenience and to minimize confusion among interested parties, DOE adopted MHLF provisions into subpart S of 10 CFR part 431. 74 FR 12058, 12062 (March 23, 2009). Therefore, DOE will refer to MHLFs as ''equipment'' throughout the notice because of their placement in 10 CFR part 431. When the notice refers to specific provisions in Part A of EPCA, the term ''product'' is used. The location of provisions within the CFR does not affect either their substance or applicable procedure.

[4] American National Standards Institute. *ANSI C82.6–2005, American National Standard for Lamp Ballasts—Ballasts for High-Intensity Discharge Lamps—Methods of Measurement.* Approved February 14, 2005.

[5] IEC 62301, *Household electrical appliances—Measurement of standby power* (Edition 2.0, 2011–01).

[6] IEC 62087, *Audio, video and related equipment—Methods of measurement for power consumption* (Edition 1.0, Parts 1–6: 2015, Part 7: 2018).

methods for MHLFs based on measuring ballast efficiency in accordance with ANSI C82.6–2005 (''March 2010 Final Rule''). 75 FR 10950. In the March 2010 Final Rule, DOE determined that ''off mode'' as defined by EPCA is not applicable to MHLFs because there is no condition in which the components of a MHLF are connected to the main power source and are not already in a mode accounted for in either active or standby mode. *Id.* at 10954–10955.

On May 30, 2018, DOE published in the **Federal Register** a request for information seeking comments on the current test procedure for MHLFs. 83 FR 24680 (''May 2018 RFI''). On July 14, 2021, DOE published in the **Federal Register** a notice of proposed rulemaking (''NOPR'') proposing amendments to the current test procedure for MHLFs. 86 FR 37069 (''July 2021 NOPR''). DOE held a public meeting related to the July 2021 NOPR on August 5, 2021.

DOE received comments in response to the July 2021 NOPR from the interested parties listed in Table I.1.

TABLE I.1—LIST OF COMMENTERS WITH WRITTEN SUBMISSIONS IN RESPONSE TO THE JULY 2021 NOPR

Commenter(s)	Reference in this Final Rule	Commenter type
People's Republic of China	China	Nation.
Signify North America Corporation	Signify	Manufacturer.

This document addresses information and comments received in response to the July 2021 NOPR. A parenthetical reference at the end of a comment quotation or paraphrase provides the location of the item in the public record.[7]

II. Synopsis of the Final Rule

In this final rule, DOE amends 10 CFR 431.324, ''Uniform test method for the measurement of energy efficiency and standby mode energy consumption of metal halide lamp ballasts,'' as follows: (1) incorporating by reference new relevant industry standards as well as updating to latest versions of existing references; (2) revising definitions and reorganizing the content of the test procedure for better readability and clarity; (3) clarifying the selection of reference lamps to be tested with metal halide lamp ballasts; (4) specifying the light output level at which to test dimming ballasts in active mode; and (5) referencing IEC 63103:2020 and clarifying instructions for measuring the standby mode energy consumption of metal halide lamp ballasts.

The adopted amendments are summarized in Table II.1 compared to the test procedure provision prior to the amendment, as well as the reason for the adopted change.

TABLE II.1—SUMMARY OF CHANGES IN THE AMENDED TEST PROCEDURE

DOE test procedure prior to amendment	Amended test procedure	Attribution
References ANSI C82.6–2005, which describes methods of measurement for ballasts that operate high intensity discharge (''HID'') lamps.	References the updated version ANSI C82.6–2015 (R2020), which clarifies test requirements and incorporates new sections that specify instrumentation and measurement methods.	Harmonize with updated industry standard.
References ANSI C78.43–2004, which describes characteristics of single-ended metal halide lamps.	References the updated version ANSI C78.43–2017, which incorporates new data sheets for additional lamps and updates ballast design information in certain data sheets.	Harmonize with updated industry standard.
Does not reference an industry standard for double-ended metal halide lamps.	References ANSI C78.44–2016 to specify physical and electrical characteristics for double-ended metal halide lamps, consistent with the procedure for single-ended metal halide lamps.	Reference industry standard.
To define ''ballast efficiency,'' references the term ''nominal system'' in ANSI C78.43–2004, but that term does not appear in the ANSI standard.	Revises the definition of ''ballast efficiency'' to remove the term ''nominal system'' and moves testing instructions from the definition to the test procedure.	Improve readability.
Does not explicitly define ''reference lamp''	States that metal halide lamps used for testing must meet the definition of a reference lamp found in ANSI C82.9–2016.	Reference industry standard.
Does not provide direction for which lamp to use for testing ballasts that can operate lamps of more than one wattage, or that can operate both quartz and ceramic metal halide lamps.	Directs that ballasts designated with ANSI codes corresponding to more than one lamp must be tested with the lamp having the highest nominal lamp wattage as specified in ANSI C78.43–2017 or ANSI C78.44–2016, as applicable, and that ballasts designated with ANSI codes corresponding to both ceramic metal halide lamps (code beginning with ''C'') and quartz metal halide lamps (code beginning with ''M'') of the same nominal lamp wattage must be tested with the quartz metal halide lamp. Adds supporting definitions for ''quartz metal halide lamp'' and ''ceramic metal halide lamp''.	Ensure representativeness, repeatability, and reproducibility of test results for new products on the market.
Does not provide direction for the light output level at which to test dimming ballasts in active mode.	Directs dimming ballasts to be tested at the maximum input power in active mode.	Improve reproducibility of test results.

[7] The parenthetical reference provides a reference for information located in the docket of DOE's rulemaking to develop test procedures for MHLFs. (Docket No. EERE–2017–BT–TP–0053, which is maintained at *www.regulations.gov*). The references are arranged as follows: (commenter name, comment docket ID number at page of that document).

TABLE II.1—SUMMARY OF CHANGES IN THE AMENDED TEST PROCEDURE—Continued

DOE test procedure prior to amendment	Amended test procedure	Attribution
Incorporates by reference ANSI C82.6–2005 for the measurement of standby mode energy consumption.	Incorporates by reference IEC 63103:2020 for the measurement of standby mode energy consumption and references active mode test method for test conditions and setup.	Reference more applicable industry standard.

DOE has determined that the amendments described in section III and adopted in this document will not alter the measured efficiency of MHLFs, or require retesting or recertification solely as a result of DOE's adoption of the amendments to the test procedures. Additionally, DOE has determined that the amendments will not increase the cost of testing. Discussion of DOE's actions are addressed in detail in section III of this document.

The effective date for the amended test procedures adopted in this final rule is 30 days after publication of this document in the **Federal Register**. Representations of energy use or energy efficiency must be based on testing in accordance with the amended test procedures beginning 180 days after the publication of this final rule.

III. Discussion

In response to the July 2021 NOPR, DOE received general comments regarding amended test procedures for MHLFs as well as more specific comments regarding proposed updates to industry standards and clarifications of test methods. The amendments being adopted in this final rule and comments are discussed in the following sections.

A. General Topics

In response to the July 2021 NOPR, Signify stated that the test procedure proposed by DOE seems reasonably designed to measure the energy use or efficiency of MHLFs during a representative average use cycle or period of use. (Signify, No. 10 at p. 11) Signify also recommended, however, that DOE not change the test procedure for MHLFs because the existing one successfully communicates ballast energy efficiency and the accelerated market transition to light-emitting diode (''LED'') technology reduces any potential benefits of improving the test procedure. (Signify, No. 10 at p. 2) NEMA similarly stated that MHLFs are a highly mature technology for which sales are migrating to LED products; and that therefore, sweeping changes to the test procedure were not necessary. (NEMA, Public Meeting Transcript, pp. 27–28)

Regarding impact on measured values, Signify stated that the test procedure updates proposed in the July 2021 NOPR would not have a significant impact on measured values used for certifying compliance, with possible exceptions of proposals regarding standby mode power and ballast efficiency for dimming ballasts. (Signify, No. 10 at p. 9)

DOE is publishing this final rule in satisfaction of the 7-year review requirement specified in EPCA, which requires DOE to determine whether amended test procedures would more accurately or fully comply with the requirements for the test procedures to not be unduly burdensome to conduct and be reasonably designed to produce test results that reflect energy efficiency, energy use, and estimated operating costs during a representative average use cycle or period of use. (42 U.S.C. 6293(b)(1)(A)) DOE finds that the adoption of applicable industry standards, updates to existing references of industry standards, and adoption of other clarifying amendments specified in the following sections will result in a more accurate test procedure and one that reflects industry best practices for testing MHLFs. Comments regarding the impacts on measured values resulting from amendments to standby mode testing and testing of dimming ballasts are discussed respectively, in sections III.F.2 and III.E.1.b. of this document.

B. Scope

EPCA and DOE regulations define MHLF as a light fixture for general lighting application designed to be operated with a metal halide lamp and a ballast for a metal halide lamp. (42 U.S.C. 6291(a)(64) and 10 CFR 431.322). Metal halide ballast is defined as a ballast used to start and operate metal halide lamps. (42 U.S.C. 6291(a)(62) and 10 CFR 431.322). Metal halide lamp is defined as a high intensity discharge (''HID'') lamp in which the major portion of the light is produced by radiation of metal halides and their products of dissociation, possibly in combination with metallic vapors. (42 U.S.C. 6291(a)(63) and 10 CFR 431.322).

DOE is not changing the scope of equipment covered by its MHLF test procedure, or the relevant definitions, in this final rule.

C. Definitions

DOE provides definitions concerning metal halide lamp ballasts and fixtures at 10 CFR 431.322. In the July 2021 NOPR, DOE proposed to define several terms in 10 CFR 431.322 pertaining to the proposed test specifications for reference lamps used in testing (see section III.E.1 for greater detail). 86 FR 37069, 37079. Specifically, DOE proposed to define the term ''reference lamp'' as a lamp that meets the operating conditions of a reference lamp as defined by ANSI C82.9–2016. *Id.* DOE proposed to define ''quartz metal halide lamp'' as a lamp with an arc tube made of quartz materials, and ''ceramic metal halide lamp'' as a lamp with an arc tube made of ceramic materials. *Id.* Further, DOE proposed to amend the existing definition for the term ''ballast efficiency'' in 10 CFR 431.322 by removing clause 3 in the definition—which references ''nominal system'' and ANSI C78.43—since the test procedure in its entirety outlines the system requirements when testing the ballast efficiency of a metal halide lamp ballast. *Id.* DOE also proposed to remove clauses 4 and 5 in the ''ballast efficiency'' definition, which provide input power and output power specifications for ballasts with a frequency of 60 Hz, and greater than 60 Hz, respectively. DOE proposed to move these requirements to the test procedure found in 10 CFR 431.324 because they describe the test method. *Id.*

DOE received no comments regarding these modifications. For the reasons discussed in the July 2021 NOPR and in this paragraph, DOE is adopting these proposed changes to definitions in this final rule.

D. References to Industry Standards

The MHLF test procedure currently incorporates by reference the 2005 version of ANSI C82.6 (''ANSI C82.6–2005'') and the 2004 version of ANSI C78.43 (''ANSI C78.43–2004'').[8] Industry periodically updates its testing standards to account for changes in technology, developments in test

[8] American National Standards Institute. *ANSI C78.43–2004, American National Standard for Electric Lamps—Single-Ended Metal Halide Lamps.* Approved May 5, 2004.

methodology, developments in test instruments, and/or changes in industry practice. In the July 2021 NOPR, DOE identified updated versions of the industry standards incorporated by reference in the MHLF test procedure as shown in Table III.1 of this document. 86 FR 37069, 37072.

DOE compared these updated versions to those versions currently referenced by DOE's test procedure to determine to what extent, if any, incorporating by reference the latest industry standards would alter the measured energy efficiency or measured energy use, as determined under the existing test procedure, as required by EPCA. (42 U.S.C. 6293(e)(1)) 86 FR 37069, 37073–37075. Specifically, DOE reviewed the 2020 version of ANSI C82.6 (''ANSI C82.6–2015 (R2020)'') [9] and the 2017 version of ANSI C78.43 (''ANSI C78.43–2017'') [10] for this purpose.

ANSI C82.6–2005 is an industry standard that describes the procedures to be followed, and the precautions to be taken, in measuring the performance of ballasts that operate HID lamps. In the July 2021 NOPR, DOE identified the following differences between the 2015 version of ANSI C82.6 and the 2020 version: The 2020 version of ANSI C82.6 includes a requirement that the ballast under test must be operated until it reaches equilibrium, thereby ensuring stable conditions for testing, which is already included in DOE's test procedure; the 2020 version of ANSI C82.6 provides greater flexibility by recommending the use of either a ''make-before-break'' or fast-acting switch for the basic stabilization method when switching a reference lamp from a reference ballast circuit to a test ballast circuit; the 2020 version of ANSI C82.6 clarifies certain headings consistent with specifications in the DOE test procedure; the 2020 version of ANSI C82.6 includes specifications pertaining to stabilization that reflect ''best practices;'' the 2020 version of ANSI C82.6 adds instrumentation requirements to improve consistency and repeatability of measured values, and that would not impact measured values; the 2020 version of ANSI C82.6 updates the list of pertinent measurements for electronic and magnetic ballasts; the 2020 version of ANSI C82.6 includes new sections that specify instrumentation to use and how to take certain measurements to improve consistency and repeatability; and reaffirms the equation for calculating ballast efficiency in DOE's regulations. 86 FR 37069, 37073–37074.

ANSI C78.43 is an industry standard that sets forth the physical and electrical characteristics for single-ended metal halide lamps operated on 60 Hertz (''Hz'') ballasts. DOE tentatively determined that the changes in ANSI C78.43–2017 are mainly updates to certain lamp datasheets related to lamp designations, physical descriptions of lamps, and minor changes to test parameters. 86 FR 37069, 37074. The updated datasheets would provide characteristics for additional reference lamps to use for testing, which DOE tentatively determined reflect current industry practice. 86 FR 37069, 37075.

In its review of the updated versions of ANSI C82.6 and ANSI C78.43, DOE tentatively determined that the changes would not result in a change in measured values or test burden. DOE proposed to reference ANSI C82.6–2015 (R2020) and ANSI C78.43–2017 in the DOE test procedure. *Id.*

TABLE III.1—INDUSTRY STANDARDS REFERENCED IN MHLF TEST PROCEDURE WITH UPDATED VERSIONS ADOPTED IN FINAL RULE

Industry standard previously referenced	Updated version adopted in this Final Rule *
ANSI C78.43 version 2004 (10 CFR 431.322)	ANSI C78.43 version 2017
ANSI C82.6 version 2005 (10 CFR 431.324)	ANSI C82.6 version 2015 (R2020)

* Note: Additionally, this final rule incorporates by reference ANSI C78.44–2016, ANSI C82.9–2016, and IEC 63103:2020 in the MHLF test procedure.

In addition to updating existing references to industry standards in DOE's test procedure with the most recent versions, DOE proposed in the July 2021 NOPR to incorporate by reference additional industry standards related to the testing of MHLFs that were not already referenced in the test procedure. 86 FR 37069, 37075–37076. Specifically, DOE proposed to incorporate by reference ANSI C78.44–2016 [11] to provide the physical and electrical characteristics for testing with double-ended metal halide lamps, ANSI C82.9–2016 [12] to provide the definition of a reference lamp and IEC 62301:2011 for the measurement of standby mode energy consumption. *Id.* DOE tentatively determined that the inclusion of ANSI C78.44–2016 would ensure that necessary specifications are being provided for testing metal halide ballasts that operate double-ended metal halide lamps. *Id.* DOE tentatively determined that industry already adheres to stipulations for reference lamps as specified in ANSI C82.9–2016. *Id.* Regarding standby mode, DOE noted that it developed the standby mode test method to be consistent with the industry standard IEC 62301:2005, but also through reference to ANSI C82.6–2005. 86 FR 37069, 37076. DOE tentatively determined to directly incorporate by reference the most recent version, IEC 62301:2011. *Id.*

In the July 2021 NOPR, DOE requested comment on its proposal to incorporate by reference ANSI C82.6–2015 (R2020), ANSI C78.43–2017, ANSI C78.44–2016, ANSI C82.9–2016, and IEC 62301:2011 in the MHLF test procedure. 86 FR 37069, 37085.

Signify expressed support for incorporating by reference ANSI C82.6–2015 (R2020), ANSI C78.43–2017, ANSI C78.44–2016, and ANSI C82.9–2016, stating that the standards are congruent with the latest ANSI C82 committee consensus on the technical requirements and test procedures of metal halide ballasts and lamps. Signify stated that updated versions of ANSI C78.43–2017, ANSI C78.44–2016, and ANSI C82.9–2016 offer more accurate descriptions than previous editions and

[9] American National Standards Institute. *ANSI C82.6–2015 (R2020), American National Standard for Lamp Ballasts—Ballasts for High-Intensity Discharge Lamps—Methods of Measurement.* Approved March 30, 2020.

[10] American National Standards Institute. *ANSI/NEMA C78.43–2017, American National Standard for Electric Lamps—Single-Ended Metal Halide Lamps.* Approved December 21, 2017.

[11] American National Standards Institute. ANSI C78.44–2016, American National Standard for Electric Lamps— Double-Ended Metal Halide Lamps. Approved July 1, 2016.

[12] American National Standards Institute. *ANSI C82.9–2016, American National Standard for Lamp Ballasts— High-Intensity-Discharge and Low-Pressure Sodium Lamps-Definitions.* Approved July 12, 2016.

should not have a major impact on test results. (Signify, No. 10 at p. 2, 3)

In this final rule, as proposed in the July 2021 NOPR and based on the discussion in the preceding paragraphs and in the July 2021 NOPR, DOE incorporates by reference the industry standards ANSI C82.6–2015 (R2020), ANSI C78.43–2017, ANSI C78.44–2016, and ANSI C82.9–2016. In this final rule, DOE is not adopting IEC 62301:2011 for the measurement of standby mode energy consumption as proposed in the July 2021 NOPR. In its place, DOE is adopting IEC 63103:2020 to replace references to ANSI C82.6 in the MHLF standby mode test method (see section III.F.2 of this document for further details). DOE has determined that, because these updates to industry standard references do not involve substantive changes to the test setup and methodology but rather are clarifications that align DOE's test procedures with latest industry best practices, they will not affect measured values.

E. Amendments to Active Mode Test Method

In this final rule, as proposed in the July 2021 NOPR, DOE adopts clarifying modifications to the active mode test method specified in 10 CFR 431.324. Specifically, DOE amends the test conditions and setup, as well as the test method for the measurement of ballast efficiency of MHLFs. DOE also amends the test procedure to specify that the language in 10 CFR 431.324 takes precedence over the industry standard in cases where there is a conflict between any referenced industry standard and the language of the test procedure as revised by this final rule.

DOE has determined that, because the adopted amendments to the active mode test method do not involve substantive changes to the test methodology but rather clarifications, they will not affect measured values. DOE details the amendments to the active mode test method and discussion of comments in the following subsections.

1. Test Conditions and Setup

Paragraph (b)(1)(i) (''Test Conditions'') of 10 CFR 431.324 specifies test conditions and setup requirements applicable to active mode testing. In the July 2021 NOPR, DOE proposed to amend the test conditions and setup paragraph to more accurately reference industry standards and the relevant sections of those standards, provide direction for testing metal halide lamp ballasts that operate lamps of different wattages or lamp types, and specify testing of dimming metal halide lamp ballasts at maximum input power. 86 FR 37069, 37076. DOE also proposed to revise the heading of paragraph (b)(1)(i) from ''Test Conditions'' to ''Test Conditions and Setup'' and to redesignate it as paragraph (b)(2) of the revised 10 CFR 431.324 to align with proposed additions to paragraph (b) pertaining to test setup. *Id.* The specific amendments as proposed and finalized are discussed in further detail in the sections that follow.

a. General Test Conditions

Paragraph (b)(1)(i) of 10 CFR 431.324 references Section 4.0, ''General Conditions for Electrical Performance Tests,'' of ANSI C82.6 for power supply, ballast test conditions, lamp position, lamp stabilization, and test instrumentation. In the July 2021 NOPR, DOE proposed to relocate lamp stabilization requirements from this paragraph to the test method paragraph, newly designated as paragraph (b)(3), because lamp stabilization is part of the test method rather than a test condition, and to better align the test procedure with the organization of the updated ANSI C82.6 standard. 86 FR 37069, 37076. (See section III.E.2.a of this document regarding changes to the stabilization method) Also within the redesignated test conditions paragraph (b)(2), DOE proposed to include specification that the circuits used for testing must be in accordance with the circuit connections set forth in Section 6.3 of ANSI C82.6. *Id.*

DOE received no comments regarding these modifications. In this final rule, for reasons discussed in this section and in the July 2021 NOPR, DOE adopts these changes as proposed.

b. Dimming Ballasts

In the March 2010 Final Rule, DOE determined that active mode applies to a functioning ballast operating with any amount of rated system light output (*i.e.,* greater than zero percent), and noted that if a ballast is dimmed (*i.e.,* operating the light source at more than zero percent, but less than 100 percent), the lamp and the ballast are both still in active mode. 75 FR 10950, 10953. In the July 2021 NOPR, DOE tentatively determined that in the case of dimming ballasts, where input power can vary, a specification regarding how to test these ballasts is necessary. DOE proposed to specify that dimming metal halide lamp ballasts be tested at maximum input power. 86 FR 37069, 37076.

Signify expressed support for DOE's proposal to specify that dimming metal halide lamp ballasts be tested at maximum input power. (Signify, No. 10 at p. 4) Signify commented that magnetic metal halide ballasts should not be dimmed below 50 percent rated power because the lamp operation may become unstable, the lamp color may shift dramatically, and the lamp electrodes' sputtering rate may significantly decrease lamp lifetime. Signify further commented that while electronic metal halide ballasts can dim metal halide lamps below 50 percent rated power, color shift and lifetime issues may remain. For these reasons, Signify stated that the best practical way to test dimming metal halide lamp ballasts is at full power. (Signify, No. 10 at pp. 4–5, 5) Signify further stated that the proposed clarification to test dimming ballasts at maximum power could change measured values if manufacturers had previously tested ballasts at different dimming points. Signify stated, however, that testing at maximum power is appropriate practice. (Signify, No. 10 at p. 10)

DOE appreciates information on the dimming characteristics of metal halide ballasts. In this final rule, DOE is specifying to test dimming ballasts at maximum input power, *i.e.,* at a non-dimmed level. DOE's review of the market indicates that specification sheets for dimming metal halide lamp ballasts provide input power at 100 percent power level as well as at lower power levels. Therefore, DOE does not expect this specification to result in a change in measured values of representations. In this final rule, for reasons specified in preceding paragraphs and in the July 2021 NOPR, DOE amends the test procedure to specify that dimming metal halide lamp ballasts be tested at maximum input power.

c. Reference Lamps

Reference lamps must be used for testing MHLF ballast efficiency. Based on responses on the May 2018 RFI, DOE confirmed that the availability of reference lamps for metal halide ballast testing is sufficient and, in the July 2021 NOPR, proposed several additions to the test conditions and setup paragraph of 10 CFR 431.324 to clarify the selection of metal halide lamps used in testing metal halide lamp ballasts. 86 FR 37069, 37076. ANSI C82.9–2016 provides definitions related to specific terms used in industry standards for HID lamps and ballasts. Thus, in the July 2021 NOPR, DOE proposed to specify that the metal halide lamps used for testing must meet the definition of a reference lamp as defined by ANSI C82.9–2016. In addition, ANSI C78.43–2017 and ANSI C78.44–2016 specify the physical and electrical requirements that single-ended and double-ended

metal halide lamps operated on 60 Hz ballasts must meet to qualify as reference lamps. Therefore, DOE also proposed that the metal halide lamps used for testing must be within the acceptable range for a reference lamp of the rated values specified in ANSI C78.43–2017 and ANSI C78.44–2016 for single-ended metal halide lamps and double-ended metal halide lamps, respectively. *Id.*

The definition of basic model for MHLFs states that basic models are rated to operate a given lamp type and wattage. 10 CFR 431.322. Therefore, as DOE noted in the July 2021 NOPR, metal halide ballasts capable of operating multiple lamp wattages currently fall within multiple basic models. 86 FR 37069, 37077. No specification regarding the reference lamp to be used in testing metal halide lamp ballasts, pertaining to either lamp wattage or lamp type, is provided in 10 CFR 431.324. Thus, DOE proposed revisions to the test procedure to clarify the wattage and type of reference lamp to be used for testing. *Id.*

DOE has identified metal halide lamp ballasts that may be able to operate lamps of different wattages (*e.g.,* a ballast that can operate a 70 W lamp or 100 W lamp). Section 6.18 of ANSI C82.6–2015 (R2020) states that, if a ballast can operate multiple lamp types, some (unspecified) regulations require that a ballast be tested with the highest lamp power specified by the manufacturer. Thus, in the July 2021 NOPR, DOE proposed to add a requirement to 10 CFR 431.324 that metal halide lamp ballasts designated with ANSI codes corresponding to more than one lamp must be tested with the lamp having the highest nominal lamp wattage as specified in ANSI C78.43–2017 or ANSI C78.44–2016, as applicable. 86 FR 37069, 37077.

DOE also identified some ballasts that can operate both ceramic metal halide lamps and quartz metal halide lamps. Based on data collected for DOE's HID lamps final rule determination published on December 9, 2015 (80 FR 76355),[13] DOE has determined that quartz metal halide lamps are more popular than ceramic metal halide lamps. In the July 2021 NOPR, DOE proposed to add a requirement to 10 CFR 431.324 that ballasts designated with ANSI codes corresponding to both ceramic metal halide lamps (code beginning with ''C'') and quartz metal halide lamps (code beginning with ''M'') of the same nominal lamp wattage must be tested with the quartz metal halide lamp. 86 FR 37069, 37077.

Signify expressed support for the proposal to test ballasts with lamps at the highest lamp wattage. Signify expressed no preference for testing with a quartz metal halide lamp over a ceramic metal halide lamp. (Signify, No. 10 at p. 5) Signify asserted that using a reference lamp ensures test result repeatability because the ballast load will always be operating at nominal voltage, whereas lamps used in practice undergo voltage variation as they age. (Signify, No. 10 at pp. 5–6)

For the reasons discussed in the preceding paragraphs and in the July 2021 NOPR, in this final rule DOE adopts the proposed requirements that for ballasts capable of operating lamps of different wattages, select the reference lamp with the highest wattage; and for ballasts capable of operating quartz metal halide lamps and ceramic metal halide lamps of the same wattage, select the quartz metal halide lamp for testing.

2. Test Method

In the July 2021 NOPR, DOE proposed to add paragraphs to the test method paragraph describing requirements for lamp stabilization, test measurements, and calculations. DOE also proposed to revise the heading of paragraph (b)(2) of 10 CFR 431.324 from ''Test Measurement'' to ''Test Method'' and redesignate it as paragraph (b)(3) to align with the proposed revisions to paragraph (b). In addition, DOE proposed to add the ballast efficiency calculation contained in paragraph (b)(3) of existing 10 CFR 431.324 to the ''Test Method'' paragraph to further improve organization. 86 FR 37069, 37077. The specific amendments as proposed are discussed in further detail in the sections that follow.

a. Stabilization Criteria

Paragraph (b)(1)(i) (''Test Conditions'') of 10 CFR 431.324 contains instructions for lamp stabilization prior to testing (hereafter referred to as the ''basic stabilization method''). Paragraph (b)(1)(ii) of 10 CFR 431.324 (''Alternative Stabilization Method'') specifies an alternate stabilization method for cases where switching without extinguishing the lamp is impossible, or for low-frequency electronic ballasts.

In the July 2021 NOPR, DOE proposed to replace the explicit instructions for lamp stabilization in 10 CFR 431.324 with direct references to Sections 4.4.2 and 4.4.3 of ANSI C82.6–2015 (R2020) for the basic stabilization method and the alternative stabilization method, respectively. 86 FR 37069, 37077. DOE had adopted the explicit stabilization instructions in the March 2010 Final Rule based on then-anticipated changes to the updated version of ANSI C82.6 provided by NEMA. *Id.* Because the explicit instructions for lamp stabilization in 10 CFR 431.324 are now contained in ANSI C82.6–2015 (R2020), DOE proposed to reference the relevant sections, Sections 4.4.2 and 4.4.3. *Id.* DOE noted one difference in the basic lamp stabilization method in 10 CFR 431.324 compared ANSI C82.6–2015 (R2020) and proposed to keep the specification in 10 CFR 431.324, as it is clearer and more practical to execute. *Id.* Specifically, ANSI C82.6–2015 (R2020) states that stabilization is determined by operating the lamp within 3 percent of its rated wattage in the specified ambient temperature until the electrical parameters ''cease to change.'' In 10 CFR 431.324, stabilization is reached when the lamp's electrical characteristics vary by no more than 3 percent in three consecutive 10- to 15-minute intervals. In the July 2021 NOPR, DOE tentatively determined that the verbiage ''cease to change'' in the updated ANSI stability criteria would be nearly impossible to meet, as electrical parameters are expected to change by a small percentage after each measurement. *Id.*

Signify expressed support for retaining the basic stabilization method and adopting the alternative stabilization method described in ANSI C82.6–2015 (R2020). Signify added that the basic stabilization method has been successfully used to test magnetic metal halide lamp ballasts but cannot be used for electronic metal halide lamp ballasts, as stably transferring a lamp from a warmup (standby) ballast to an electronic ballast is difficult. (Signify, No. 10 at p. 6) Signify explained that when lamps on electronic ballasts are disconnected and transferred, or are in ''no lamp'' condition, they either power off until the power supply comes back on, or they power their lamp ignition circuit on again—neither of which are suitable for a stable transfer. Signify stated that the alternative stabilization method ensures repeatable ballast efficiency test results for electronic ballasts by avoiding multiple lamp reignitions. (Signify, No. 10 at p. 7)

DOE reiterates that replacement of the basic stabilization method instructions with direct references to Section 4.4.2 of ANSI C82.6–2015 (R2020) would maintain the same method as currently specified, as the current instructions are

[13] U.S. Department of Energy–Office of Energy Efficiency and Renewable Energy. Energy Conservation Program for Consumer Equipment: Final Determination: High-Intensity Discharge Lamps. 2015. Washington, DC Available at *www.regulations.gov/docket?D=EERE–2010–BT–STD–0043.*

consistent with ANSI C82.6–2015 (R2020), with the exception noted above regarding specific intervals for stabilization determination. As described in the preceding paragraphs and in the July 2021 NOPR, in this final rule DOE is replacing the explicit instructions for lamp stabilization in 10 CFR 431.324 with direct references to Sections 4.4.2 and 4.4.3 of ANSI C82.6–2015 (R2020) for the basic stabilization method and the alternative stabilization method, respectively. DOE is also specifying for the basic stabilization method that stabilization is reached when the lamp's electrical characteristics vary by no more than 3-percent in three consecutive 10- to 15-minute intervals measured after the minimum burning time of 30 minutes, consistent with the proposal in the July 2021 NOPR.

b. Test Measurements

Paragraph (b)(2) of 10 CFR 431.324 specifies that the ballast input power and lamp output power during operating conditions must be measured in accordance with the methods specified in Section 6.0 of ANSI C82.6–2005. In ANSI C82.6–2015 (R2020), Sections 6.1 and 6.8 pertain specifically to measuring ballast input power, and Sections 6.2 and 6.10 pertain specifically to measuring lamp output power. In the July 2021 NOPR, DOE proposed to remove the general reference to Section 6 of ANSI C82.6 in 10 CFR 431.324 and to instead specifically reference Sections 6.1 and 6.8 of ANSI C82.6–2015 (R2020) for measuring ballast input power, and sections 6.2 and 6.10 of ANSI C82.6–2015 (R2020) for measuring lamp output power. DOE expected that these updates would further clarify the test procedure and not change measured values. 86 FR 37069, 37077.

DOE received no comments regarding these updates. For the reasons discussed in the July 2021 NOPR and in this paragraph, DOE is adopting these proposed changes in this final rule.

c. Calculations

Paragraph (b)(3) of 10 CFR 431.324 (''Efficiency Calculation'') specifies that the measured lamp output power must be divided by the measured ballast input power to determine the percent efficiency of the ballast under test to three significant figures.

In the July 2021 NOPR, DOE proposed to amend this instruction by referencing the specific sections in the DOE test procedure that specify how to measure ballast input power and ballast output (lamp) power. 86 FR 37069, 37078. Specifically, DOE proposed the amended instruction to state that the measured ballast output (lamp) power, as measured in paragraph (b)(2)(ii)(B), must be divided by the measured ballast input power, as measured in paragraph (b)(2)(ii)(B), to determine the percent efficiency of the ballast under test to three significant figures.

DOE received no comments regarding these proposed amendments to the test procedure. For the reasons discussed in the July 2021 NOPR and in this paragraph, DOE is adopting these proposed changes in this final rule. DOE notes that in the amended test procedure, this instruction is specified in paragraph (b)(3)(iii)(A) of 10 CFR 431.324.

F. Amendments to Standby Mode Test Method

Paragraph (c) of 10 CFR 431.324 (''Testing and Calculations-Standby Mode) specifies the procedure for measuring standby mode energy consumption. This paragraph explicitly states that the measurement of standby mode need not be performed to determine compliance with energy conservation standards for metal halide lamp fixtures at this time. 10 CFR 431.324(c). That paragraph further states that this statement will be removed as part of the rulemaking to amend the energy conservation standards for metal halide lamp fixtures to account for standby mode energy consumption, and the specified procedure shall apply on the compliance date for such requirements. *Id.* However, all representations related to standby mode energy consumption of MHLFs made after September 7, 2010, must be based upon results generated under this test procedure. *Id.*

In this final rule, as proposed in the July 2021 NOPR, DOE adopts clarifying modifications to the standby mode test method specified in 10 CFR 431.324. 86 FR 37069, 37079. DOE has determined that, because the adopted amendments to standby mode test procedures do not involve substantive changes to the test methodology, they will not affect measured values. DOE details the amendments to the standby mode test method and discussion of comments in the following subsections.

1. Test Conditions and Setup

In the July 2021 NOPR, DOE proposed to modify the general instructions of the standby mode test method found in existing paragraph (c) to clarify that standby mode energy consumption need only be measured for ballasts capable of operating in standby mode. DOE also proposed to state that the language in 10 CFR 431.324 would take precedence if there is a conflict between the industry standard, IEC 62301:2011, proposed to be adopted through reference, and the language in the revised DOE test procedure. 86 FR 37069, 37079.

DOE received no comments regarding these proposed amendments to the test procedure. For the reasons discussed in the July 2021 NOPR and in the preceding paragraph, DOE is adopting the changes to the test conditions and setup instructions as proposed.

Both the active mode and standby mode test methods measure input power of the ballast. As such, for consistency within the test procedure and to reduce the test burden, in the July 2021 NOPR, DOE proposed to modify the test conditions and setup paragraph in the standby mode test method with the following directions: (1) test conditions and setup must be in accordance with the active mode test method, and (2) each ballast must be operated with a lamp as specified in the active mode test method, except that the use of a reference lamp is not required. 86 FR 37069, 37079. Because lamps are not turned on during the measurement of standby mode energy consumption, DOE tentatively determined that whether the lamp to which the ballast is connected is a reference lamp does not impact standby mode energy consumption measurements. In addition, DOE proposed to revise the heading ''Test Conditions'' of paragraph (c)(1) of existing 10 CFR 431.324 to ''Test Conditions and Setup'', redesignated as paragraph (c)(2), to reflect these changes. *Id.*

Signify expressed support for the proposed amendments with no additional comment. (Signify, No. 10 at p. 7)

For the reasons discussed in the July 2021 NOPR and in preceding paragraphs, DOE adopts its proposal to reference the active mode test method section for the test conditions and setup of the standby mode test method, and to specify that each ballast must be operated with a lamp as specified in the active mode test method, except that the use of a reference lamp is not required.

2. Test Method and Measurement

In the July 2021 NOPR, DOE proposed to add a new paragraph, designated as (c)(3), with the heading ''Test Method and Measurement,'' containing specific instructions related to the measurement of standby mode energy consumption. 86 FR 37069, 37079. DOE proposed to: (1) add instructions to turn on, at full light output, the lamp to which the ballast is connected to ensure the ballast is not defective and (2) require ballast stabilization and subsequent

measurement of standby mode energy consumption to be conducted according to Section 5 of IEC 62301:2011. *Id.*

Signify stated that DOE's proposed instruction to require the lamp be turned on to ensure the ballast is not defective prior to measuring standby mode energy consumption is reasonable. Signify added that since a defective ballast may appear to be operating in standby mode with an unlit lamp, the ballast should be powered on before and after taking standby mode power measurements to verify it is operating properly. (Signify, No. 10 at p. 8)

DOE determined that turning the lamp on prior to measurement is sufficient for verifying that the ballast is not defective—that it is providing the power supply necessary to operate the lamps, and that turning it on after the measurement is not necessary. This also aligns with DOE's standby mode test method for fluorescent lamp ballasts (see appendix Q).

For the reasons discussed in the preceding paragraphs and in the July 2021 NOPR, in this final rule, DOE adopts its proposed instructions requiring the lamp be turned on prior to measurement to ensure the ballast is not defective prior to measuring standby mode energy consumption.

Regarding DOE's proposal to stabilize and measure standby mode energy consumption in accordance with Section 5 of IEC 62301:2011, as discussed, EPCA directs DOE to establish test procedures to include standby mode energy consumption, taking into consideration the most current versions of Standards 62301 and 62087 of the International Electrotechnical Commission. (42 U.S.C. 6295(gg)(2)(A)) In establishing the standby test procedure for MHLFs, DOE developed the test procedure to be consistent with IEC Standard 62301. 75 FR 10950, 10959. IEC Standard 62087 applies only to audio, video, and related equipment, and does not apply to lighting products. IEC 62301:2011 does not specifically address lighting products but applies generally to household electrical appliances, which include lighting products. In order to develop a test method that would be familiar to metal halide lamp ballast manufacturers, DOE also referenced language and methodologies presented in ANSI C82.6–2005. *Id.*

In the July 2021 NOPR, DOE proposed a standby mode test procedure that directly references IEC 62301:2011 to replace the test procedure based on IEC 62301 with references to ANSI C82.6. Specifically, DOE proposed to reference Section 5 of IEC 62301:2011 for stabilization and standby mode energy consumption measurements. 86 FR 37069, 37078–37079. DOE noted that ANSI C82.6 does not explicitly address measurements for standby mode, whereas IEC 62301:2011 provides instructions for measuring standby mode energy consumption of household electrical appliances. *Id.* In the May 2019 RFI, DOE requested comment on the potential impact of incorporating IEC 62301:2011. NEMA responded that IEC 62301:2011 is not applicable to high intensity discharge (''HID'') lamp ballasts. In response, in the July 2021 NOPR, DOE referred NEMA to section 1 of IEC 62301:2011 which states the standard is applicable to electrical products with certain rated voltages which would include metal halide lamp ballasts. *Id.* In the July 2021 NOPR, DOE tentatively determined that replacing the currently referenced industry standard (ANSI C82.6–2005) with one that addresses standby mode energy consumption (IEC 62301:2011) would improve clarity, better align with the requirements of EPCA and the standby mode test methods for other lighting products. 86 FR 37069, 37078–37079.

China, Signify, and NEMA recommended that DOE adopt IEC 63103:2020 rather than IEC 62301 for measuring standby mode power. (China, No. 9 at p. 3; Signify, No. 10 at pp. 2–3; NEMA, Public Meeting Transcript, pp. 14–15) China stated that standby power measurements should adhere to IEC 63103:2020, as MHLFs are lighting devices, and asserted that IEC 62301:2011 is for household appliances. (China, No. 9 at p. 3)

Signify stated that MHLFs are not used in household applications and that IEC 63103:2020 has been specifically developed to measure low power modes, such as standby mode, of lighting devices and systems. Signify stated that the definition of standby power in IEC 63103:2020 is ''standby mode [of lighting equipment] when the equipment is connected to a supply voltage with the illumination function off, while capable of being activated by an external trigger not being a trigger from a network,'' which better aligns with DOE's definition. (Signify, No. 10 at p. 3) Signify stated that IEC 63103:2020 includes more specific guidelines and clarifications for stabilizing MHLFs than IEC 62301:2011 does, and that the ANSI C137 Lighting Systems Committee is in the process of adopting IEC 63103:2020 as an ANSI standard for similar reasons. (Signify, No. 10 at pp 3–4; 8–9)

NEMA stated that when IEC 62301:2011 was the only standby mode testing standard, it was acceptable to use for MHLFs; but now that the lighting industry has written a standby testing standard (*i.e.,* IEC 63103:2020), it is more appropriate to use it. (NEMA, Public Meeting Transcript, pp. 14–15)

As noted in the July 2021 NOPR, DOE proposed to reference Section 5 of IEC 62301:2011 for stabilization and standby mode energy consumption measurements. 86 FR 37069, 37079. To evaluate commenters' recommendation to reference IEC 63103:2020 instead of IEC 62301:2011, DOE reviewed the method for stabilization and standby mode energy consumption measurements in the two standards in a line-by-line comparison. The method of stabilization and measurement are specified in Section 5.3 of IEC 62301:2011 and in Section 5.4 of IEC 63103:2020. Instructions in both these sections outline the same three options for stabilization and measurement of standby mode energy consumption: a direct meter reading method, an average reading method, and a sampling method. Sections in both standards describe the direct meter reading method as recording the instrument power reading; the average reading method as averaging power readings over a specified period or alternatively recording the accumulated energy consumption over a specified period and dividing by the period; and the sampling method as recording power measurements at regular intervals throughout the measurement period. Sections in both standards specify that the direct meter reading method shall only be used where the mode does not change and the power reading displayed is stable, and that results from the other two methods have precedence over this method. Both standards do not permit the average reading method for cyclic loads or limited duration modes and specify that the sampling method shall be used for cyclic or unstable modes and where there is doubt regarding the behavior of the test unit. Further, in each method, the steps for stabilizing and taking measurements are laid out in the same manner and use almost identical language. The only differences in the methods described in IEC 62301:2011 and IEC 63103:2020, shown in Table III.2, are the threshold at which the test unit is considered stable.

TABLE III.2—COMPARISON OF STABILIZATION THRESHOLDS IN IEC 62301 AND IEC 63103

Test method	IEC 62301:2011	IEC 63103:2020
Direct meter reading method; average reading method; sampling method (cyclic power consumption).	The difference between two readings (direct method) or the difference between the two comparison periods divided by the time difference of the mid-points of the comparison periods has a slope (average reading method, sampling method) is less than 10 milliwatt per hour ("mW/h") for ≤1 watt ("W") input power or 1% of measured input power per hour for >1W input power.	The difference between two readings (direct method) or the difference between the two comparison periods divided by the time difference of the mid-points of the comparison periods has a slope (average reading method, sampling method) is less than 50 mW/h or 3% of measured input power per hour, whichever is greater, for all input powers.
Sampling method (power consumption within a mode is non-cyclic).	Linear regression through all power readings for the second two thirds of the total period has a slope of less than 10 mW/h for ≤ 1W input power or 1% of measured input power per hour for ≤1W input power.	Linear regression through all power readings for the second two thirds of the total period has a slope of less than 10 mW/h or 1% of measured input power per hour, whichever is greater, for all input powers.
Sampling method (modes that are known to be non-cyclic per specs and varying).	Cumulative average of all data points in the second two thirds of the total time period must fall within a band of ±0.2%.	Cumulative average of all data points in the second two thirds of the total time period must fall within a band of ±1%.

As shown in Table III.2, IEC 63103:2020 specifies slightly less stringent stabilization thresholds than IEC 62301:2011 (*e.g.,* specifying for the sampling method that the cumulative average of all data points in the second two thirds of the total time period must fall within a band of ±1 percent, as opposed to a band of ±0.2 percent). DOE finds that these minor differences in stability criteria would not result in measurably different values of standby power between the two methods. As commenters have noted, IEC 63103:2020 was specifically developed to measure standby mode of lighting devices, and thereby established stabilization thresholds more relevant to such products.

Finally, as noted in preceding paragraphs, DOE requested comment on its consideration of referencing IEC 62301:2011 in the May 2019 RFI and its proposal to reference it in the July 2021 NOPR. 86 FR 37069, 37078–37079. Because IEC 62301:2011 and IEC 63103:2020 provide the same test methods for stabilization and measurement, different only in certain stabilization thresholds, interested parties have had the opportunity to comment on the method of measuring standby mode in accordance with IEC 63103:2020. As commented by interested parties (as summarized in the preceding paragraphs), DOE has determined that the adoption of IEC 63103:2020 better aligns with the lighting industry's best practices for measuring standby mode energy consumption.

As directed by EPCA, DOE has taken into consideration IEC 62301 for the standby mode energy consumption test method (42 U.S.C. 6295(gg)(2)(A)). As stated, the test method provided in IEC 63103:2020 applicable to MHLFs is essentially the same test method as proposed by reference in IEC 62301. DOE has determined that the two test methods would produce equivalent results. As IEC 63103:2020 is specific to lighting, DOE has determined that it is the more appropriate industry standard to reference for measuring standby mode energy consumption of MHLFs. For these reasons, in this final rule DOE amends the MHLF test procedure to reference Section 5.4 of IEC 63103:2020 for stabilizing and measuring the standby mode energy consumption of MHLF ballasts.

Regarding the implications of replacing the reference to ANSI C82.6–2005, Signify stated that the standby power test method specified by ANSI C82.6–2005 is very different from the proposed IEC 62301:2011 method, and thus measured values could change. Signify stated the impact would be minimal, however, as few metal halide lamp ballasts operate in standby mode. Signify also noted that DOE has no efficiency standard for standby mode. (Signify, No. 10 at pp. 10–11)

As noted by Signify and as discussed previously, DOE currently does not prescribe standards that incorporate standby mode energy consumption of MHLFs. Based on a review of MHLFs and metal halide lamp ballasts on the market, DOE has determined that manufacturers are not making representations of standby mode power consumption in public-facing materials; therefore, amending the test procedure to reference IEC 63103:2020 (which, as discussed, produces results equivalent to IEC 62301:2011) rather than ANSI C82.6–2005 will result in no impact for MHLF manufacturers.

G. Compliance Date

The effective date for the adopted test procedure amendment will be 30 days after publication of this final rule in the **Federal Register**. EPCA prescribes that all representations of energy efficiency and energy use, including those made on marketing materials and product labels, must be made in accordance with an amended test procedure, beginning 180 days after publication of the final rule in the **Federal Register**. (42 U.S.C. 6293(c)(2)) EPCA provides an allowance for individual manufacturers to petition DOE for an extension of the 180-day period if the manufacturer may experience undue hardship in meeting the deadline. (42 U.S.C. 6293(c)(3)) To receive such an extension, petitions must be filed with DOE no later than 60 days before the end of the 180-day period and must detail how the manufacturer will experience undue hardship. (*Id.*)

H. Test Procedure Costs and Impacts

In this document, DOE amends the existing test procedure for MHLFs by (1) incorporating by reference new relevant industry standards as well as updating to latest versions of existing references; (2) revising definitions and reorganizing the content of the test procedure for better readability and clarity; (3) clarifying the selection of reference lamps to be tested with metal halide lamp ballasts; (4) specifying the light output level at which to test dimming ballasts in active mode; and (5) referencing IEC 63103:2020 and clarifying instructions for measuring the standby mode energy consumption of metal halide lamp ballasts. DOE has determined that the test procedure as amended by this final rule would not impact testing costs as discussed in the following paragraphs.

In the July 2021 NOPR, DOE tentatively determined that the proposed amendments to the MHLF test procedure would not be unduly burdensome to conduct and would

result in neither a reduction of nor an increase in future testing costs. 86 FR 37069, 37080. The proposed amendments update industry standard references of ANSI C78.43 from version 2004 to 2017 and ANSI C82.6 from version 2005 to 2020 and references three new standards: ANSI C78.44–2016 to incorporate industry-approved lamp characteristics for double-ended metal halide lamps; ANSI C82.9–2016 to incorporate industry-approved definition for reference lamp; and IEC 62301:2011 to incorporate an industry standard that is specific to standby energy consumption measurement. *Id.* In the July 2021 NOPR, DOE tentatively determined these updates only clarify requirements, and do not add complexity to test conditions/setup or add test steps. *Id.* In this final rule, DOE is adopting IEC 63103:2020 rather than IEC 62301:2011. As discussed in section III.F.2 of this document, these two standards specify slightly different stabilization thresholds but are expected to yield equivalent standby power measurement results. Therefore, DOE finds that its preliminary conclusions pertaining to IEC 62301:2011 also apply to IEC 63103:2020 as adopted in this final rule.

Further, DOE finds that the amendments, aside from updates and addition of industry standards, being adopted in this final rule and proposed in the July 2021 NOPR provide further clarification to DOE's test procedure for MHLF, do not substantively change the existing test methods and therefore do not impact test burden or testing costs. These amendments are clarifications regarding selection of reference lamps (see section III.E.1.c); of definitions (see section III.C); of light output level at which to test dimming ballasts (see section III.E.1.b); and testing standby mode energy consumption (see section III.F).

Signify stated that adopting the test procedure updates will incur approximately $50,000 in additional costs through the need for a new National Voluntary Laboratory Accreditation Program (''NVLAP'') accreditation and to acquire equipment compatible with the proposed IEC standby power test method. Signify added that laboratories conducting the standby power test method will undergo a testing time increase of at least 90 minutes per unit. Signify stated that additional costs and test burden are unnecessary given the market transition to LED technology. (Signify, No. 10 at p. 11–12)

As stated in the July 2021 NOPR, a laboratory gaining accreditation to test MHLFs according to the test procedure in 10 CFR 431.324 would be doing so voluntarily or as required by an entity other than DOE. Accreditation by NVLAP is not required by DOE under 10 CFR part 431 or 10 CFR part 429 for the testing of MHLFs, and therefore does not factor into testing costs associated with DOE's test procedure. 86 FR 37069, 37080. Regarding acquisition of test equipment compatible with the adoption of the IEC standard for standby mode energy consumption, DOE reviewed the instrumentation information provided in the IEC standards and did not identify the need for any equipment for power measurements that laboratories would not already have for taking power measurements of electrical products.

In this final rule, DOE is specifying to stabilize the ballast and measure its standby mode energy consumption in accordance with Section 5.4 of IEC 63103:2020 (see section III.F.2). DOE has determined that this amendment does not add testing time to the standby mode test method. Prior to this amendment the standby mode test method stated ballast test conditions shall be as specified in Section 4.0 of ANSI C82.6 and input power shall be measured as specified in Section 6.0 of ANSI C82.6. However, Section 4.0 of ANSI C82.6 provides specifications for lamp stabilization, not specifications, as provided in Section 5.4 of IEC 63103:2020, for ballast stabilization in standby mode (*i.e.,* lamp is turned off). DOE assumes that when using the previous standby test method any lab or manufacturer would follow best practices and stabilize the unit being tested before taking measurements. Section 5.4 of IEC 63103:2020 provides three different step-by-step methods of determining stabilization and taking the final power measurement (see section III.F.2). These methods are not new and are almost the same ones employed in the industry standard for determining standby mode energy consumption for household electrical appliances, IEC 62301:2011. DOE finds that manufacturers, in accordance with best industry practices, would likely have used a method similar to the ones provided in Section 5.4 of IEC 63103:2020. Hence DOE has determined that referencing Section 5.4 of IEC 63103:2020 for stabilization and measurement of the standby mode energy consumption of the ballast does not result in additional testing time.

In summary, DOE has determined that the amendments adopted in this final rule do not impact test burden or testing costs.

IV. Procedural Issues and Regulatory Review

A. Review Under Executive Orders 12866 and 13563

Executive Order (''E.O.'')12866, ''Regulatory Planning and Review,'' as supplemented and reaffirmed by E.O. 13563, ''Improving Regulation and Regulatory Review, 76 FR 3821 (Jan. 21, 2011), requires agencies, to the extent permitted by law, to (1) propose or adopt a regulation only upon a reasoned determination that its benefits justify its costs (recognizing that some benefits and costs are difficult to quantify); (2) tailor regulations to impose the least burden on society, consistent with obtaining regulatory objectives, taking into account, among other things, and to the extent practicable, the costs of cumulative regulations; (3) select, in choosing among alternative regulatory approaches, those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity); (4) to the extent feasible, specify performance objectives, rather than specifying the behavior or manner of compliance that regulated entities must adopt; and (5) identify and assess available alternatives to direct regulation, including providing economic incentives to encourage the desired behavior, such as user fees or marketable permits, or providing information upon which choices can be made by the public. DOE emphasizes as well that E.O. 13563 requires agencies to use the best available techniques to quantify anticipated present and future benefits and costs as accurately as possible. In its guidance, the Office of Information and Regulatory Affairs (''OIRA'') in the Office of Management and Budget (''OMB'') has emphasized that such techniques may include identifying changing future compliance costs that might result from technological innovation or anticipated behavioral changes. For the reasons stated in the preamble, this final regulatory action is consistent with these principles.

Section 6(a) of E.O. 12866 also requires agencies to submit ''significant regulatory actions'' to OIRA for review. OIRA has determined that this final regulatory action does not constitute a ''significant regulatory action'' under section 3(f) of E.O. 12866. Accordingly, this action was not submitted to OIRA for review under E.O. 12866.

B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of a final regulatory flexibility analysis (FRFA) for any final rule where the agency was first required by law to publish a proposed rule for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. As required by Executive Order 13272, ''Proper Consideration of Small Entities in Agency Rulemaking,'' 67 FR 53461 (August 16, 2002), DOE published procedures and policies on February 19, 2003 to ensure that the potential impacts of its rules on small entities are properly considered during the DOE rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel's website: *energy.gov/gc/office-general-counsel.*

DOE has recently conducted a focused inquiry into small business manufacturers of the MHLFs covered by this rulemaking. DOE used available public information to identify potential small manufacturers. DOE accessed the Compliance Certification Database [14] to create a list of companies that import or otherwise manufacture the MHLFs covered by this proposal.

The Small Business Administration (''SBA'') considers a business entity to be a small business, if, together, with its affiliates, it employs less than a threshold number of workers specified in 13 CFR part 121. These size standards and codes established by the North American Industry Classification System (''NAICS'') and are available at *https://www.sba.gov/document/support—table-size-standards.* Metal halide lamp ballast manufacturing is classified under NAICS 335311, ''Power, Distribution, and Specialty Transformer Manufacturing.'' The SBA sets a threshold of 750 employees or fewer for an entity to be considered as a small business for this category. MHLF manufacturing is classified under NAICS 335122, ''Commercial, Industrial, and Institutional Electric Lighting Fixture Manufacturing.'' The SBA sets a threshold of 500 employees or less for an entity to be considered as a small business for this category.

To estimate the number of companies that could be small businesses that manufacture these ballasts, DOE conducted a market survey using publicly available information. DOE's research involved reviewing information provided by trade associations (*e.g.,* the National Electrical Manufacturers' Association), information from individual company websites, market research tools (*i.e.,* Hoover's reports) and DOE's certification and compliance database. DOE screened out companies that do not meet the definition of a ''small business'' or are completely foreign owned and operated. DOE identified five small businesses that produce metal halide lamp ballasts sold in the United States and can be considered small business manufacturers. For MHLFs, DOE identified approximately 54 small businesses that produce MHLFs sold in the United States and can be considered small business manufacturers.

In the July 2021 NOPR, DOE tentatively concluded that the proposed amendments would not increase the industry cost of the existing test procedure (see section III.H) and would not have a ''significant economic impact on a substantial number of small entities,'' so the preparation of an IRFA is not warranted. 86 FR 37069, 37082.

DOE received no comments on the impacts of the test procedure amendments proposed in the NOPR on small businesses.

Therefore, DOE concludes that the cost effects accruing from the final rule would not have a ''significant economic impact on a substantial number of small entities,'' and that the preparation of a FRFA is not warranted. DOE has submitted a certification and supporting statement of factual basis to the Chief Counsel for Advocacy of the Small Business Administration for review under 5 U.S.C. 605(b).

C. Review Under the Paperwork Reduction Act of 1995

Manufacturers of MHLFs must certify to DOE that their products comply with any applicable energy conservation standards. To certify compliance, manufacturers must first obtain test data for their products according to the DOE test procedures, including any amendments adopted for those test procedures. DOE has established regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment, including MHLFs. (*See generally* 10 CFR part 429.) The collection-of-information requirement for the certification and recordkeeping is subject to review and approval by OMB under the Paperwork Reduction Act (PRA). This requirement has been approved by OMB under OMB control number 1910–1400. Public reporting burden for the certification is estimated to average 35 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. DOE is not amending the certification or reporting requirements for MHLFs in this final rule.

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

D. Review Under the National Environmental Policy Act of 1969

In this final rule, DOE establishes test procedure amendments that it expects will be used to develop and implement future energy conservation standards for MHLFs. DOE has determined that this rule falls into a class of actions that are categorically excluded from review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*) and DOE's implementing regulations at 10 CFR part 1021. Specifically, DOE has determined that adopting test procedures for measuring energy efficiency of consumer products and industrial equipment is consistent with activities identified in 10 CFR part 1021, appendix A to subpart D, A5 and A6. Accordingly, neither an environmental assessment nor an environmental impact statement is required.

E. Review Under Executive Order 13132

Executive Order 13132, ''Federalism,'' 64 FR 43255 (August 4, 1999), imposes certain requirements on agencies formulating and implementing policies or regulations that preempt State law or that have federalism implications. The Executive order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and to carefully assess the necessity for such actions. The Executive order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE examined this final rule and determined that it will not have a substantial direct effect on the States, on the relationship between the national

[14] U.S. Department of Energy Compliance Certification Management System, available at: *www.regulations.doe.gov/ccms.*

government and the States, or on the distribution of power and responsibilities among the various levels of government. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the products that are the subject of this final rule. States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in EPCA. (42 U.S.C. 6297(d)) No further action is required by Executive Order 13132.

F. Review Under Executive Order 12988

Regarding the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, ''Civil Justice Reform,'' 61 FR 4729 (Feb. 7, 1996), imposes on Federal agencies the general duty to adhere to the following requirements: (1) eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; (3) provide a clear legal standard for affected conduct rather than a general standard; and (4) promote simplification and burden reduction. Section 3(b) of Executive Order 12988 specifically requires that executive agencies make every reasonable effort to ensure that the regulation (1) clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires executive agencies to review regulations in light of applicable standards in sections 3(a) and 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this final rule meets the relevant standards of Executive Order 12988.

G. Review Under the Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (''UMRA'') requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. Public Law 104–4, sec. 201 (codified at 2 U.S.C. 1531). For a regulatory action resulting in a rule that may cause the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector of $100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a), (b)) The UMRA also requires a Federal agency to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a proposed ''significant intergovernmental mandate,'' and requires an agency plan for giving notice and opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect small governments. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820; also available at *www.energy.gov/gc/office-general-counsel.* DOE examined this final rule according to UMRA and its statement of policy and determined that the rule contains neither an intergovernmental mandate, nor a mandate that may result in the expenditure of $100 million or more in any year, so these requirements do not apply.

H. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105–277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This final rule will not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

I. Review Under Executive Order 12630

DOE has determined, under Executive Order 12630, ''Governmental Actions and Interference with Constitutionally Protected Property Rights'' 53 FR 8859 (March 18, 1988), that this regulation will not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

J. Review Under Treasury and General Government Appropriations Act, 2001

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516 note) provides for agencies to review most disseminations of information to the public under guidelines established by each agency pursuant to general guidelines issued by OMB. OMB's guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE's guidelines were published at 67 FR 62446 (Oct. 7, 2002). Pursuant to OMB Memorandum M–19–15, Improving Implementation of the Information Quality Act (April 24, 2019), DOE published updated guidelines which are available at *www.energy.gov/sites/prod/files/2019/12/f70/DOE%20Final%20Updated%20IQA%20Guidelines%20Dec%202019.pdf.* DOE has reviewed this final rule under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

K. Review Under Executive Order 13211

Executive Order 13211, ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,'' 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to OMB, a Statement of Energy Effects for any significant energy action. A ''significant energy action'' is defined as any action by an agency that promulgated or is expected to lead to promulgation of a final rule, and that (1) is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (3) is designated by the Administrator of OIRA as a significant energy action. For any significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use if the regulation is implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

This regulatory action is not a significant regulatory action under Executive Order 12866. Moreover, it would not have a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as a significant energy action by the Administrator of OIRA. Therefore, it is not a significant energy action, and, accordingly, DOE has not prepared a Statement of Energy Effects.

L. Review Under Section 32 of the Federal Energy Administration Act of 1974

Under section 301 of the Department of Energy Organization Act (Pub. L. 95–91; 42 U.S.C. 7101), DOE must comply with section 32 of the Federal Energy Administration Act of 1974, as amended by the Federal Energy Administration Authorization Act of 1977. (15 U.S.C. 788; ''FEAA'') Section 32 essentially provides in relevant part that, where a proposed rule authorizes or requires use

of commercial standards, the notice of proposed rulemaking must inform the public of the use and background of such standards. In addition, section 32(c) requires DOE to consult with the Attorney General and the Chairman of the Federal Trade Commission (''FTC'') concerning the impact of the commercial or industry standards on competition.

The modifications to the test procedure for MHLFs adopted in this final rule incorporates testing methods contained in certain sections of the following commercial standards:

(1) American National Standards Institute (''ANSI'') C78.43 (ANSI C78.43–2017), ''American National Standard for Electric Lamps—Single-Ended Metal Halide Lamps,'' approved December 21, 2017.

(2) ANSI C78.44 (ANSI C78.44–2016), ''American National Standard for Electric Lamps—Double-Ended Metal Halide Lamps,'' approved July 1, 2016.

(3) ANSI C82.6–2015 (R2020) (ANSI C82.6–2015 (R2020)), ''American National Standard for Lamp Ballasts—Ballasts for High-Intensity Discharge Lamps—Methods of Measurement,'' approved March 30, 2020.

(4) ANSI C82.9 (ANSI C82.9–2016), ''American National Standard for Lamp Ballasts—High-Intensity Discharge and Low-Pressure Sodium Lamps—Definitions,'' approved July 12, 2016.

(5) International Electrotechnical Commission (''IEC'') 63103 (IEC 63103), ''Lighting Equipment—Non-Active Mode Power Measurement'' (Edition 1.0, 2020–07).

DOE has evaluated these standards and is unable to conclude whether it fully complies with the requirements of section 32(b) of the FEAA (*i.e.,* whether it was developed in a manner that fully provides for public participation, comment, and review.) DOE has consulted with both the Attorney General and the Chairman of the FTC about the impact on competition of using the methods contained in these standards and has received no comments objecting to their use.

M. Congressional Notification

As required by 5 U.S.C. 801, DOE will report to Congress on the promulgation of this rule before its effective date. The report will state that it has been determined that the rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

N. Description of Materials Incorporated by Reference

In this final rule, DOE incorporates by reference the test standard published by ANSI, titled ''American National Standard for Electric Lamps—Single-Ended Metal Halide Lamps,'' ANSI C78.43–2017. ANSI C78.43–2017 is an industry accepted test standard that specifies the physical and electrical requirements for single-ended metal halide lamps operated on 60 Hz ballasts. Specifically, the test procedure codified by this final rule references ANSI C78.43–2017 for characteristics of reference lamps that must be used when testing metal halide lamp ballasts. ANSI C78.43–2017 is readily available on ANSI's website at *webstore.ansi.org/.*

In this final rule, DOE also incorporates by reference the test standard published by ANSI, titled ''American National Standard for Electric Lamps—Double-Ended Metal Halide Lamps,'' ANSI C78.44–2016. ANSI C78.44–2016 is an industry accepted test standard that sets forth the physical and electrical requirements for double-ended metal halide lamps operated on 60 Hz ballasts. Specifically, the test procedure codified by this final rule references ANSI C78.44–2016 for characteristics of reference lamps that must be used when testing metal halide lamp ballasts. ANSI C78.44–2016 is readily available on ANSI's website at *webstore.ansi.org/.*

In this final rule, DOE also incorporates by reference the test standard published by ANSI, titled ''American National Standard for Lamp Ballasts—Ballasts for High-Intensity Discharge Lamps—Methods of Measurement,'' ANSI C82.6–2015 (R2020). ANSI C82.6–2015 (R2020) is an industry accepted test standard that describes the procedures and the precautions to be taken in measuring performance of low-frequency ballasts (electromagnetic and electronic ballasts that operate at less than 400 Hz) for HID lamps. Specifically, the test procedure codified by this final rule references Sections of ANSI C82.6–2015 (R2020) for general testing conditions and methods for the measurement of ballast operating characteristics. ANSI C82.6–2015 (R2020) is readily available on ANSI's website at *webstore.ansi.org/.*

In this final rule, DOE also incorporates by reference the test standard published by ANSI, titled ''American National Standard for Lamp Ballasts—High-Intensity Discharge and Low-Pressure Sodium Lamps—Definitions,'' ANSI C82.9–2016. ANSI C82.9–2016 is an industry accepted standard that provides definitions related to specific terms related to HID lamps and ballasts. Specifically, the test procedure codified by this final rule references ANSI C82.9–2016 for defining reference lamps which are used when testing metal halide lamp ballasts. ANSI C82.9–2016 is readily available on ANSI's website at *webstore.ansi.org/.*

In this final rule, DOE also incorporates by reference the test standard published by IEC, titled ''Lighting Equipment—Non-Active Mode Power Measurement (Edition 1.0, July 2020),'' IEC 63103:2020. IEC 63103:2020 is an industry accepted standard that describes measurements of electrical power consumption in standby mode, off mode, and networked standby mode for lighting equipment. Specifically, the test procedure codified by this final rule references Section 5.4 of IEC 63103:2020 for testing standby mode energy consumption of metal halide lamp ballasts. IEC 63103:2020 is readily available on IEC's website at *webstore.ansi.org.*

V. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this final rule.

List of Subjects in 10 CFR Part 431

Administrative practice and procedure, Confidential business information, Energy conservation test procedures, Incorporation by reference, Reporting and recordkeeping requirements.

Signing Authority

This document of the Department of Energy was signed on June 17, 2022, by Kelly J. Speakes-Backman, Principal Deputy Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the **Federal Register**.

Signed in Washington, DC, on June 17, 2022.

Treena V. Garrett,

Federal Register Liaison Officer, U.S. Department of Energy.

For the reasons stated in the preamble, DOE amends part 431 of chapter II of title 10, Code of Federal Regulations as set forth below:

PART 431—ENERGY EFFICIENCY PROGRAM FOR CERTAIN COMMERCIAL AND INDUSTRIAL EQUIPMENT

■ 1. The authority citation for part 431 continues to read as follows:

Authority: 42 U.S.C. 6291–6317; 28 U.S.C. 2461 note.

■ 2. Section 431.322 is amended by:
■ a. Removing the definition for ''AC control signal'';
■ b. Revising the definition for ''Ballast efficiency'';
■ c. Adding in alphabetical order a definition for ''Ceramic metal halide lamp'';
■ d. Removing the definition for ''DC control signal'';
■ e. Adding in alphabetical order definitions for ''Quartz metal halide lamp'' and ''Reference lamp''; and
■ f. Removing the definition for ''Wireless control signal''.

The revision and additions read as follows:

§ 431.322 Definitions concerning metal halide lamp ballasts and fixtures.

* * * * *

Ballast efficiency means, in the case of a high intensity discharge fixture, the efficiency of a lamp and ballast combination, expressed as a percentage, and calculated in accordance with the following formula: Efficiency = P_{out}/P_{in} where:

(1) P_{out} equals the measured operating lamp wattage; and

(2) P_{in} equals the measured operating input wattage.

(3) The lamp, and the capacitor when the capacitor is provided, shall constitute a nominal system in accordance with the ANSI C78.43–2017 (incorporated by reference; see § 431.323);

(4) For ballasts with a frequency of 60 Hz, Pin and Pout shall be measured after lamps have been stabilized according to Section 4.4 of ANSI C82.6–2015 (incorporated by reference; see § 431.323) using a wattmeter with accuracy specified in Section 4.5 of ANSI C82.6–2015; and

(5) For ballasts with a frequency greater than 60 Hz, Pin and Pout shall have a basic accuracy of ±0.5 percent at the higher of either 3 times the output operating frequency of the ballast or 2.4 kHz.

* * * * *

Ceramic metal halide lamp means a metal halide lamp with an arc tube made of ceramic materials.

* * * * *

Quartz metal halide lamp means a metal halide lamp with an arc tube made of quartz materials.

Reference lamp is a metal halide lamp that meets the operating conditions of a reference lamp as defined by ANSI C82.9–2016 (incorporated by reference; see § 431.323).

* * * * *

■ 3. Section 431.323 is amended by:
■ a. Revising paragraphs (a) and (b);
■ b. Redesignating paragraph (c) as paragraph (d); and
■ c. Adding new paragraph (c).

The revisions and addition read as follows:

§ 431.323 Materials incorporated by reference.

(a) Certain material is incorporated by reference into this subpart with the approval of the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the U.S. Department of Energy (DOE) must publish a document in the **Federal Register** and the material must be available to the public. All approved incorporation by reference (IBR) material is available for inspection at DOE, and at the National Archives and Records Administration (NARA). Contact DOE at: the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, Sixth Floor, 950 L'Enfant Plaza SW, Washington, DC 20024, (202) 586–9127, *Buildings@ee.doe.gov, https://www.energy.gov/eere/buildings/building-technologies-office.* For information on the availability of this material at NARA, email: *fr.inspection@nara.gov,* or go to: *www.archives.gov/federal-register/cfr/ibr-locations.html.* The material may be obtained from the sources in the following paragraphs of this section.

(b) *ANSI.* American National Standards Institute, 25 W. 43rd Street, 4th Floor, New York, NY 10036; 212–642–4900; *www.ansi.org.*

(1) ANSI C78.43–2017, American National Standard for Electric Lamps—Single-Ended Metal Halide Lamps, approved December 21, 2017; IBR approved for § 431.324.

(2) ANSI C78.44–2016, American National Standard for Electric Lamps—Double-Ended Metal Halide Lamps, approved July 1, 2016; IBR approved for § 431.324.

(3) ANSI C82.6–2015 (R2020), American National Standard for Lamp Ballasts—Ballasts for High-Intensity Discharge Lamps—Methods of Measurement, approved March 30, 2020; IBR approved for §§ 431.322; 431.324.

(4) ANSI C82.9–2016, American National Standard for Lamp Ballasts—High Intensity Discharge and Low-Pressure Sodium Lamps—Definitions, approved July 12, 2016; IBR approved for §§ 431.322; 431.324.

(c) *IEC.* International Electrotechnical Commission, 3 rue de Varembé, 1st Floor, P.O. Box 131, CH—1211 Geneva 20—Switzerland, +41 22 919 02 11, or go to *webstore.iec.ch/home.*

(1) IEC 63103, Lighting Equipment—Non-active Mode Power Measurement, Edition 1.0, dated 2020–07; IBR approved for § 431.324.

(2) [Reserved]

* * * * *

■ 4. Section 431.324 is revised to read as follows:

§ 431.324 Uniform test method for the measurement of energy efficiency and standby mode energy consumption of metal halide lamp ballasts.

(a) *Scope.* This section provides test procedures for measuring, pursuant to EPCA, the energy efficiency of metal halide lamp ballasts. After July 25, 2022, and prior to December 21, 2022, any representations with respect to energy use or efficiency of metal halide lamp fixtures must be in accordance with the results of testing pursuant to this section or the test procedures as they appeared in 10 CFR 431.324 as it appeared in the 10 CFR parts 200–499 edition revised as of January 1, 2022. On or after December 21, 2022, any representations, including certifications of compliance for metal halide lamp fixtures subject to any energy conservation standard, made with respect to the energy use or efficiency of metal halide lamp fixtures must be made in accordance with the results of testing pursuant to this section.

(b) *Active mode procedure*—(1) *General instructions.* Specifications in referenced standards that are recommended, that ''shall'' or ''should'' be met, or that are not otherwise explicitly optional, are mandatory. In cases where there is a conflict between any industry standard(s) and this section, the language of the test procedure in this section takes precedence over the industry standard(s).

(2) *Test conditions and setup.* (i) The power supply, ballast conditions, lamp position, and instrumentation must all conform to the requirements specified in Section 4.0 of ANSI C82.6–2015 (R2020) (incorporated by reference; see § 431.323).

(ii) Airflow in the room for the testing period must be ≤0.5 meters/second.

(iii) Test circuits must be in accordance with the circuit connections specified in Section 6.3 of ANSI C82.6–2015 (R2020).

(iv) For ballasts designed to operate lamps rated less than 150 W that have 120 V as an available input voltage, testing must be performed at 120 V. For ballasts designed to operate lamps rated less than 150 W that do not have 120 V as an available voltage, testing must be performed at the highest available input voltage. For ballasts designed to operate lamps rated greater than or equal to 150 W that have 277 V as an available input voltage, testing must be conducted at 277 V. For ballasts designed to operate lamps rated greater than or equal to 150 W that do not have 277 V as an available input voltage, testing must be conducted at the highest available input voltage.

(v) Operate dimming ballasts at maximum input power.

(vi) Select the metal halide lamp for testing as follows:

(A) The metal halide lamp used for testing must meet the specifications of a reference lamp as defined by ANSI C82.9–2016 and the rated values of the corresponding lamp data sheet as specified in ANSI C78.43–2017 (both incorporated by reference; *see* § 431.323) for single-ended lamps and ANSI C78.44–2016 (incorporated by reference; *see* § 431.323) for double-ended lamps.

(B) Ballasts designated with ANSI codes corresponding to more than one lamp must be tested with the lamp having the highest nominal lamp wattage as specified in ANSI C78.43–2017 or ANSI C78.44–2016, as applicable.

(C) Ballasts designated with ANSI codes corresponding to both ceramic metal halide lamps (code beginning with ''C'') and quartz metal halide lamps (code beginning with ''M'') of the same nominal lamp wattage must be tested with the quartz metal halide lamp.

(3) *Test method*—(i) *Stabilization criteria*—(A) *General instruction.* Lamp must be seasoned as prescribed in Section 4.4.1 of ANSI C82.6–2015 (R2020).

(B) *Basic stabilization method.* Lamps using the basic stabilization method must be stabilized in accordance with Section 4.4.2 of ANSI C82.6–2015 (R2020). Stabilization is reached when the lamp's electrical characteristics vary by no more than 3-percent in three consecutive 10- to 15-minute intervals measured after the minimum burning time of 30 minutes.

(C) *Alternative stabilization method.* In cases where switching from the reference ballast to test ballast without extinguishing the lamp is impossible, such as for low-frequency electronic ballasts, the alternative stabilization method must be used. Lamps using the alternative stabilization method must be stabilized in accordance with Section 4.4.3 of ANSI C82.6–2015 (R2020).

(ii) *Test measurements.* (A) The ballast input power during operating conditions must be measured in accordance with the methods specified in Sections 6.1 and 6.8 of ANSI C82.6–2015 (R2020).

(B) The ballast output (lamp) power during operating conditions must be measured in accordance with the methods specified in Sections 6.2 and 6.10 of ANSI C82.6–2015 (R2020).

(C) For ballasts with a frequency of 60 Hz, the ballast input and output power shall be measured after lamps have been stabilized according to Section 4.4 of ANSI C82.6–2015 (R2020) using a wattmeter with accuracy specified in Section 4.5 of ANSI C82.6–2015 (R2020); and

(D) For ballasts with a frequency greater than 60 Hz, the ballast input and output power shall have a basic accuracy of ±0.5 percent at the higher of either 3 times the output operating frequency of the ballast or 2.4 kHz.

(iii) *Calculations.* (A) To determine the percent efficiency of the ballast under test, divide the measured ballast output (lamp) power, as measured in paragraph (b)(3)(ii) of this section, by the measured ballast input power, as measured in paragraph (b)(3)(ii) of this section. Calculate percent efficiency to three significant figures.

(B) [Reserved]

(c) *Standby mode procedure*—(1) *General instructions.* Measure standby mode energy consumption only for a ballast that is capable of operating in standby mode. Specifications in referenced standards that are recommended, that ''shall'' or ''should'' be met, or that are not otherwise explicitly optional, are mandatory. When there is a conflict, the language of the test procedure in this section takes precedence over IEC 63103 (incorporated by reference; see § 431.323).

(2) *Test conditions and setup.* (i) Establish and maintain test conditions and setup in accordance with paragraph (b)(2) of this section.

(ii) Connect each ballast to a lamp as specified in paragraph (b)(2)(vi) of this section. Note: ballast operation with a reference lamp is not required.

(3) *Test method and measurement.* (i) Turn on all of the lamps at full light output. If any lamp is not functional, replace the lamp and repeat the test procedure. If the ballast will not operate any lamps, replace the unit under test.

(ii) Send a signal to the ballast instructing it to have zero light output using the appropriate ballast communication protocol or system for the ballast being tested.

(iii) Stabilize the ballast prior to measurement using one of the methods as specified in Section 5.4 of IEC 63103.

(iv) Measure the standby mode energy consumption in watts using one of the methods as specified in Section 5.4 of IEC 63103.

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BUREAU OF CONSUMER FINANCIAL PROTECTION

12 CFR Part 1022

[Docket No. CFPB–2022–0023]

RIN 3170–AB12

Prohibition on Inclusion of Adverse Information in Consumer Reporting in Cases of Human Trafficking (Regulation V)

AGENCY: Bureau of Consumer Financial Protection.

ACTION: Final rule.

SUMMARY: The Consumer Financial Protection Bureau (Bureau) is amending Regulation V, which implements the Fair Credit Reporting Act (FCRA), to address recent legislation that assists consumers who are victims of trafficking. This final rule establishes a method for a victim of trafficking to submit documentation to consumer reporting agencies, including information identifying any adverse item of information about the consumer that resulted from certain types of human trafficking, and prohibits the consumer reporting agencies from furnishing a consumer report containing the adverse item(s) of information. The Bureau is taking this action as mandated by the National Defense Authorization Act for Fiscal Year 2022 to assist consumers who are victims of trafficking in building or rebuilding financial stability and personal independence.

DATES: This final rule is effective July 25, 2022.

FOR FURTHER INFORMATION CONTACT: Daniel Tingley, Counsel; Lanique Eubanks or Brandy Hood, Senior Counsels, Office of Regulations, at 202–435–7700 or *https://reginquiries.consumerfinance.gov/.* If you require this document in an alternative electronic format, please contact *CFPB_Accessibility@cfpb.gov.*

SUPPLEMENTARY INFORMATION: