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DEPARTMENT OF AGRICULTURE

Rural Utilities Service

7 CFR Part 1735

[Docket No. RUS–20–TELECOM–0044]

RIN 0572–AA48

Implementation of Telecommunications Provisions of the Agricultural Improvement Act of 2018; Correction

AGENCY: Rural Utilities Service, Department of Agriculture (USDA).

ACTION: Correcting amendment.

SUMMARY: On September 10, 2021, Rural Development's Rural Utilities Service (hereinafter referred to as ''the Agency'') published a document that completed modifications to existing program regulations to implement statutory provisions of the Agriculture Improvement Act of 2018 (2018 Farm Bill). Following the final implementation of the final rule, the Agency found that an amendment was necessary to clarify the meaning of a sentence. This document clarifies the final rule.

DATES: Effective June 2, 2023.

FOR FURTHER INFORMATION CONTACT: For information specific to this document contact Laurel Leverrier, Assistant Administrator Telecommunications Program, Rural Utilities Service, U.S. Department of Agriculture (USDA), email: *laurel.leverrier@usda.gov,* telephone: (202) 720–9556.

SUPPLEMENTARY INFORMATION: The Rural Utilities Service is issuing a correcting amendment to provide clarification to the final rule that published September 10, 2021, at 86 FR 50604. In that rule, the wording of § 1735.23(a) was not clear. This clarifying amendment provides for clear information for readers.

List of Subjects in 7 CFR Part 1735

Loan programs—communications, Reporting and recordkeeping requirements, Rural areas, Telephone.

For the reasons stated in the preamble, the Rural Utilities Service corrects 7 CFR part 1735 by making the following correcting amendment:

PART 1735—GENERAL POLICIES, TYPES OF LOANS, LOAN REQUIREMENTS—TELECOMMUNICATIONS PROGRAM

■ 1. The authority citation for part 1735 continues to read as follows:

Authority: 7 U.S.C. 901 *et seq.,* 1921 *et seq.,* and 6941 *et seq.*

■ 2. Amend § 1735.23 by revising the introductory text of paragraph (a) to read as follows:

§ 1735.23 Public notice.

(a) For applications which request funding in which the applicant will provide retail broadband service, the Agency's mapping tool will include the following information from each application, and be displayed for the public:

* * * * *

Andrew Berke,

Administrator, Rural Utilities Service, U.S. Department of Agriculture.

[FR Doc. 2023–11724 Filed 6–1–23; 8:45 am]

BILLING CODE 3410–15–P

DEPARTMENT OF ENERGY

10 CFR Part 431

[EERE–2019–BT–TP–0041]

RIN 1904–AE57

Energy Conservation Program: Test Procedure for Commercial Warm Air Furnaces

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

ACTION: Final rule.

SUMMARY: The U.S. Department of Energy (DOE) is amending the Federal test procedures for commercial warm air furnaces (CWAFs) to incorporate the latest versions of the industry test standards that are currently incorporated by reference. DOE is also establishing a new metric, Thermal Efficiency Two (TE2), and corresponding test procedure. Use of the newly established test procedure would become mandatory at such time as compliance with amended energy conservation standards based on TE2 is required, should DOE adopt such standards. DOE also is adopting additional specifications for CWAFs with multiple flue outlets or small flue outlets.

DATES: The effective date of this rule is July 3, 2023. These amendments will be mandatory for CWAF equipment testing starting May 28, 2024. The incorporation by reference of certain material listed in this rule is approved by the Director of the Federal Register on July 3, 2023.

ADDRESSES: The docket, which includes **Federal Register** notices, public meeting attendee lists and transcripts, comments, and other supporting documents/materials, is available for review at *www.regulations.gov* under docket number EERE–2019–BT–TP–0041. All documents in the docket are listed in the *www.regulations.gov* index. However, not all documents listed in the index may be publicly available, such as those containing information that is exempt from public disclosure.

A link to the docket web page can be found at: *www.regulations.gov/docket/EERE-2019-BT-TP-0041.* 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: Ms. Julia Hegarty, 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: (240) 597–6737. Email: *ApplianceStandardsQuestions@ee.doe.gov.*

Mr. Eric Stas, U.S. Department of Energy, Office of the General Counsel, GC–33, 1000 Independence Avenue SW, Washington, DC 20585–0121. Telephone: (202) 586–5827. Email: *Eric.Stas@hq.doe.gov.*

SUPPLEMENTARY INFORMATION:

DOE incorporates by reference the following industry standards into part 431:

ANSI/AHRI 1500–2015 *Performance Rating of Commercial Space Heating Boilers* (''AHRI 1500–2015'');

Copies of AHRI 1500–2015 can be obtained from the Air-Conditioning, Heating, and Refrigeration Institute (AHRI), 2311 Wilson Blvd., Suite 400, Arlington, VA 22201, (703) 524–8800, or online at: *www.ahrinet.org.*

CSA/ANSI Z21.47:21, *Gas-fired central furnaces* (''ANSI Z21.47–2021'');

ANSI/ASME PTC 19.3–1974 (R2004), *Supplement to ASME Performance Test Codes: Part 3: Temperature Measurement, Instruments and Apparatus;*

ANSI/ASHRAE 103–2022, *Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers* (''ASHRAE 103–2022'');

Copies of ANSI Z21.47–2021, ANSI/ASME PTC 19.3–1974 (R2004) and ANSI/ASHRAE 103–2022, can be obtained from the American National Standards Institute (ANSI), 25 W 43rd Street, 4th Floor, New York, NY 10036, (212) 642–4900, or online at: *www.webstore.ansi.org.*

ASTM D240–09, *Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter;*

ASTM D396–14a, *Standard Specification for Fuel Oils;*

ASTM D4809–09a, *Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method);*

ASTM D5291–10, *Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants;*

ASTM E230/E230M–17, *Standard Specification for Temperature-Electromotive Force (emf) Tables for Standardized Thermocouples* (''ASTM E230/E230M–17'');

Copies of ASTM D240–09, ASTM D396–14a, ASTM D4809–09a, ASTM D5291–10, and ASTM E230/E230M–17 can be obtained from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428, (877) 909–2786 or online at: *www.astm.org.*

NFPA 97–2003, *Standard Glossary of Terms Relating to Chimneys, Vents, and Heat-Producing Appliances.*

Copies of NFPA 97–2003 can be obtained from the National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169–7471, (1–800–344–3555) or online at: *www.nfpa.org.*

UL 727, *Standard for Safety Oil-Fired Central Furnaces* (''UL 727–2018'');

Copies of UL 727–2018 can be obtained from Underwriters Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, IL 60062, (847) 272–8800 or online at: *www.standardscatalog.ul.com.*

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

Table of Contents

I. Authority and Background

CWAFs are included in the list of ''covered equipment'' for which DOE is authorized to establish and amend energy conservation standards and test procedures. (42 U.S.C. 6311(1)(J)) DOE's energy conservation standards and test procedures for CWAFs are currently prescribed at subpart D of part 431 of title 10 of the Code of Federal Regulations (CFR). The following sections discuss DOE's authority to establish and amend test procedures for CWAFs 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] among other things, 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 C[2] of EPCA, Public Law 94–163 (42 U.S.C. 6311–6317, as codified) added by Public Law 95–619, Title IV, section 441(a), established the Energy Conservation Program for Certain Industrial Equipment, which sets forth a variety of provisions designed to improve energy efficiency. This covered equipment includes CWAFs, the subject of this final rule. (42 U.S.C. 6311(1)(J))

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 include definitions (42 U.S.C. 6311), energy conservation standards (42 U.S.C. 6313), test procedures (42 U.S.C. 6314), labeling provisions (42 U.S.C. 6315), and the authority to require information and reports from manufacturers (42 U.S.C. 6316; 42 U.S.C. 6296).

The Federal testing requirements consist of test procedures that manufacturers of covered equipment must use as the basis for: (1) certifying to DOE that their equipment complies with the applicable energy conservation standards adopted pursuant to EPCA (42 U.S.C. 6316(b); 42 U.S.C. 6296), and (2) making other representations about the efficiency of that equipment (42 U.S.C. 6314(d)). Similarly, DOE uses these test procedures to determine whether the equipment complies with relevant standards promulgated under EPCA.

Federal energy efficiency requirements for covered equipment established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6316(a) and 42 U.S.C. 6316(b); 42 U.S.C. 6297) DOE may, however, grant waivers

[1] All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Public Law 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 C was redesignated Part A–1.

of Federal preemption in limited circumstances for particular State laws or regulations, in accordance with the procedures and other provisions of EPCA. (42 U.S.C. 6316(b)(2)(D))

Under 42 U.S.C. 6314, EPCA also sets forth the criteria and procedures DOE must follow when prescribing or amending test procedures for covered equipment. Specifically, EPCA requires that any test procedures prescribed or amended under this section must be reasonably designed to produce test results which reflect energy efficiency, energy use or estimated annual operating cost of a given type of covered equipment (or class thereof) during a representative average use cycle and requires that test procedures not be unduly burdensome to conduct. (42 U.S.C. 6314(a)(2))

EPCA requires that the test procedure for CWAFs be those generally accepted industry testing procedures or rating procedures developed or recognized by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) or by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), as referenced in ASHRAE Standard 90.1, ''Energy Standard for Buildings Except Low-Rise Residential Buildings'' (ASHRAE Standard 90.1). (42 U.S.C. 6314(a)(4)(A)) Further, if such industry test procedure is amended, DOE must amend its test procedure to be consistent with the amended industry test procedure, unless DOE determines, by rule published in the **Federal Register** and supported by clear and convincing evidence, that such amended test procedure would not meet the requirements in 42 U.S.C. 6314(a)(2) and (3) related to representative use and test burden, in which case DOE may establish an amended test procedure that does satisfy those statutory provisions. (42 U.S.C. 6314(a)(4)(B) and (C))

EPCA also requires that, at least once every seven years, DOE evaluate test procedures for each type of covered equipment, including CWAFs, 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. (42 U.S.C. 6314(a)(1)–(3))

In addition, if DOE determines that a test procedure amendment is warranted, the Department must publish proposed test procedures in the **Federal Register** and afford interested persons an opportunity (of not less than 45 days duration) to present oral and written data, views, and arguments on the proposed test procedures. (42 U.S.C. 6314(b)) If DOE determines that test procedure revisions are not appropriate, DOE must publish in the **Federal Register** its determination not to amend the test procedures. (42 U.S.C. 6314(a)(1)(A)(ii)) As discussed further in section I.B of this document, in January 2023, ASHRAE released the latest version of ASHRAE Standard 90.1 (ASHRAE Standard 90.1–2022), which updated the referenced industry standards for testing CWAFs to reflect the most recent versions of those standards that are currently available, thereby triggering DOE's rulemaking obligations under EPCA. DOE is publishing this final rule amending the test procedure for CWAFs in satisfaction of both the ''ASHRAE trigger'' requirement under 42 U.S.C. 6314(a)(4)(B) and the 7-year-lookback review requirement specified in EPCA under 42 U.S.C. 6314(a)(1).

B. Background

DOE's current test procedure for CWAFs is codified at 10 CFR 431.76, ''Uniform test method for the measurement of energy efficiency of commercial warm air furnaces.'' The currently applicable test procedure incorporates by reference two industry standards for testing gas-fired CWAFs: American National Standards Institute (ANSI) Z21.47–2012, ''Standard for Gas-fired Central Furnaces'' (ANSI Z21.47–2012), which is used for all types of gas-fired CWAFs; and ANSI/American Society of Heating, Refrigeration, and Air-conditioning Engineers (ASHRAE) Standard 103–2007, ''Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers'' (ANSI/ASHRAE 103–2007), which is specifically used for testing condensing gas-fired CWAFs. 10 CFR 431.76 (c)(1), (d)(2), (e)(1), and (f)(1); 10 CFR 431.75(b)(1) and (c)(1). The current test procedure also incorporates by reference two industry standards for testing oil-fired CWAFs: Hydronics Institute Division of AHRI (HI) BTS–2000 Rev 06.07, ''Method to Determine Efficiency of Commercial Space Heating Boilers'' (HI BTS–2000) [3] and Underwriters Laboratories (UL) standard UL 727–2006, ''Standard for Safety Oil-Fired Central Furnaces'' (UL 727–2006).[4] 10 CFR 431.76(c)(2), (d)(1), and (e)(2); 10 CFR 471.75(d)(1) and (e)(2).

DOE most recently amended the test procedure for CWAFs in a final rule published in the **Federal Register** on July 17, 2015, which updated the test procedure for gas-fired CWAFs to incorporate by reference the latest versions of the industry standards available at the time (*i.e.,* ANSI Z21.47–2012 and ANSI/ASHRAE 103–2007). 80 FR 42614 (July 2015 final rule). At the time of the July 2015 final rule, UL 727–2006 and HI BTS–2000 were still the most recent versions of those industry standards.

Under EPCA's seven-year-lookback provision, DOE initiated a test procedure rulemaking for CWAFs by publishing a request for information (RFI) in the **Federal Register** on May 5, 2020 (May 2020 RFI). 85 FR 26626. The May 2020 RFI solicited public comments, data, and information on aspects of the existing DOE test procedure for CWAFs, including whether there are any issues with the current test procedure and whether it is in need of updates or revisions. *Id.*

DOE published a notice of proposed rulemaking (NOPR) for the CWAFs test procedure in the **Federal Register** on February 25, 2022 that presented DOE's proposals to amend that test procedure. 87 FR 10726 (February 2022 NOPR). DOE held a webinar public meeting related to this NOPR on March 29, 2022. DOE received comments in response to the February 2022 NOPR from the interested parties listed in Table I.1.

[3] DOE determined that UL 727–1994 did not provide a procedure for calculating the percent flue loss of the furnace, which is necessary in calculating the TE, and, therefore, incorporated by reference provisions from HI BTS–2000 to calculate the flue loss for oil-fired CWAFs. 69 FR 61916, 61917, 61940 (Oct. 21, 2004).

[4] UL 727–1994 is also incorporated by reference in 10 CFR 431.75 but is no longer referenced in the test method specified in 10 CFR 431.76, which references only UL 727–2006.

TABLE I.1—LIST OF COMMENTERS WITH WRITTEN SUBMISSIONS OR ORAL COMMENTS IN RESPONSE TO THE FEBRUARY 2022 NOPR

Commenter(s)	Abbreviation used in this Final Rule	Commenter type
AAON Inc	AAON	Manufacturer.
Air-Conditioning, Heating, and Refrigeration Institute	AHRI	Manufacturer Trade Association.
American Gas Association and American Public Gas Association	AGA and APGA	Utility Trade Association.
Appliance Standards Awareness Project, and Natural Resources Defense Council.	Joint Advocates	Efficiency Advocacy Organization.
California Energy Commission	CEC	Efficiency Advocacy Organization.
Carrier Corporation	Carrier	Manufacturer.
Daikin Comfort Technologies Manufacturing	Daikin	Manufacturer.
Lennox International Inc	Lennox	Manufacturer.
New York State Energy Research and Development Authority	NYSERDA	State Agency.
Northwest Energy Efficiency Alliance	NEEA	Efficiency Advocacy Organization.
Pacific Gas and Electric Company, San Diego Gas and Electric, and Southern California Edison (collectively, the "California Investor-Owned Utilities").	CA IOUs	Utilities.
Rheem Manufacturing	Rheem	Manufacturer.

A parenthetical reference at the end of a comment quotation or paraphrase provides the location of the item in the public record.[5] To the extent that interested parties have provided written comments that are substantively similar to any oral comments provided during the March 29, 2022 NOPR webinar public meeting, DOE cites the written comments throughout this final rule. For the party that provided substantive oral comments at the March 29, 2022 NOPR webinar public meeting but did not submit written comments, DOE cites the public meeting transcript.

Since publication of the February 2022 NOPR, DOE would note the following additional developments which are relevant to this rulemaking proceeding. As discussed, EPCA requires DOE to use industry test procedures developed or recognized by AHRI or ASHRAE as referenced in ASHRAE Standard 90.1. (42 U.S.C. 6314(a)(4)(A)–(B)) The latest update to ASHRAE Standard 90.1 was released in January 2023 (ASHRAE Standard 90.1–2022). ASHRAE Standard 90.1–2022 references ANSI Z21.47–2021 as the test method for gas-fired CWAFs and UL 727–2018 as the test method for oil-fired CWAFs. This action by ASHRAE triggered DOE's rulemaking obligations under EPCA. As noted previously, in such cases, EPCA requires DOE to amend the Federal test procedure to be consistent with these amended industry test procedures, unless DOE determines, by rule published in the **Federal Register** and supported by clear and convincing evidence, that to do so would not meeting the statutory requirements related to representativeness and not being unduly burdensome. (42 U.S.C. 6314(a)(4)(B)) Furthermore, EPCA also requires that, at least once every seven years, DOE evaluate test procedures for each class of covered equipment, including those for CWAFs, 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. (42 U.S.C. 6314(a)(1)) This rulemaking satisfies both of these statutory obligations.

II. Synopsis of the Final Rule

In this final rule, DOE is amending its test procedures for CWAFs as follows:

(1) Reorganize the setup and testing provisions in 10 CFR 431.76 related to the determination of thermal efficiency (TE) into the newly established 10 CFR part 431, subpart D, appendix A (appendix A);

(2) Incorporate by reference the most recent versions of the currently referenced industry standards:

- UL 727–2018 (previously UL 727–2006) for testing oil-fired CWAFs;
- AHRI 1500–2015 (previously HI BTS–2000) for performing fuel oil analysis and for calculating flue loss of oil-fired CWAFs;
- ANSI Z21.47–2021 (previously ANSI Z21.47–2012) for testing gas-fired CWAFs; and
- ANSI/ASHRAE 103–2022 (previously ANSI/ASHRAE 103–2007) for testing condensing gas-fired CWAFs;

(3) Incorporate by reference the standards referenced in UL 727–2018 (*i.e.,* NFPA 97–2003 and ANSI/ASTM E230/230M–17), AHRI 1500–2015 (*i.e.,* ASTM D396–14a, ASTM D240–09, ASTM D4809–09a, and ASTM D5291–10), and ANSI Z21.47–2021 (*i.e.,* ANSI/ASME PTC 19.3–1974 (R2004)) that are necessary for performing the DOE test procedure;

(4) Clarify how to test units with multiple flue outlets, and units with flue outlets having a cross-sectional area of 3.14 square inches or less; and

(5) Establish a new test procedure at 10 CFR part 431, subpart D, appendix B (appendix B), which generally requires testing as in appendix A, but which establishes a new metric, ''TE2.'' The new TE2 metric accounts for jacket losses and part-load operation in addition to accounting for flue losses. Manufacturers can use appendix B to make voluntary representations of TE2; representations using this test procedure are not mandatory until such time as compliance is required with amended energy conservation standards based on TE2, should DOE adopt such standards.

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

[5] The parenthetical reference provides a reference for information located in the docket of DOE's rulemaking to develop test procedures for CWAFs. (Docket No. EERE–2019–BT–TP–0041, which is maintained at *www.regulations.gov*). The references are arranged as follows: (commenter name, comment docket ID number, page of that document).

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

DOE test procedure prior to amendment	Amended test procedures	Applicable test procedure	Attribution
Referenced UL 727–2006 for testing oil-fired CWAFs.	Incorporate by reference UL 727–2018 for testing oil-fired CWAFs, and the standards referenced in UL 727–2018 that are necessary in performing the DOE test procedure (*i.e.,* NFPA 97–2003 and ANSI/ASTM E230/E230M–17).	appendix A and appendix B.	Align with industry standard update.
Referenced HI BTS–2000 for performing fuel oil analysis and for calculating flue loss of oil-fired CWAFs.	Incorporate by reference AHRI 1500–2015 for performing fuel oil analysis and for calculating flue loss of oil-fired CWAFs and the standards referenced in AHRI 1500–2015 that are necessary in performing the DOE test procedure (*i.e.,* ASTM D396–14a, ASTM D240–09, ASTM D4809–09a, and ASTM D5291–10).	appendix A and appendix B.	Align with industry standard update.
Referenced ANSI Z21.47–2012 for testing gas-fired CWAFs.	Incorporate by reference ANSI Z21.47–2021 for testing gas-fired CWAFs, and the standards referenced in ANSI Z21.47–2021 that are necessary in performing the DOE test procedure (*i.e.,* ANSI/ASME PTC 19.3–1974 (R2004)).	appendix A and appendix B.	Align with industry standard update.
Referenced ANSI/ASHRAE 103–2007 for testing condensing gas-fired CWAFs.	Incorporate by reference ANSI/ASHRAE 103–2022 for testing condensing gas-fired CWAFs.	appendix A and appendix B.	Align with industry standard update.
Did not specify how to test units with multiple flue outlets.	Adds specifications for units with multiple flue outlets. Measurements made in each flue outlet shall be averaged or adjusted using a weighted average, depending on the input capacity of the furnace module associated with each flue outlet.	appendix A and appendix B.	Additional specification to improve consistency and repeatability in testing.
Did not specify how to test units with flue outlets that are too small to fit nine thermocouples.	Adds specifications to address units with small flue outlets. Units with flue outlets that are 3.14 inches or smaller in cross-sectional area may optionally use 5 thermocouples.	appendix A and appendix B.	Additional specification to improve consistency and repeatability in testing.
Efficiency metric (TE) only accounted for flue losses and does not account for jacket losses or part-load operation.	Establishes a new metric (TE2) that accounts for flue losses, jacket losses, and part-load operation.	appendix B	Improve representativeness.

DOE has determined that the adopted amendments for the test procedure at appendix A described in section III of this document will not alter the measured TE of CWAFs, that the test procedures are not unduly burdensome to conduct, and that the test procedures more accurately produce test results that reflect energy efficiency, energy use, and estimated operating costs of CWAFs during a representative average use cycle.

DOE has determined that the additional amendments for appendix B, which adopt TE2 as a new efficiency metric for CWAFs, do alter the reported efficiency of CWAFs. However, testing in accordance with the TE2 test procedure is not required until such time as compliance is required with any amended energy conservation standards based on appendix B. Prior to such date, voluntary representations of TE2 may be made, but they must be based upon use of the test procedure in appendix B.

The amendments adopted in this final rule are discussed 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 360 days after the date of publication of this final rule in the **Federal Register**.

III. Discussion

In the following sections, DOE describes the adopted amendments to the test procedures for CWAFs. DOE also discusses issues raised by commenters on the February 2022 NOPR, along with DOE's responses.

A. Scope of Applicability

This rulemaking applies to CWAFs. EPCA defines ''warm air furnace'' as a self-contained oil-fired or gas-fired furnace designed to supply heated air through ducts to spaces that require it and includes combination warm air furnace/electric air conditioning units, but does not include unit heaters and duct furnaces. (42 U.S.C. 6311(11)(A)) DOE codified the statutory definition of ''warm air furnace'' at 10 CFR 431.72. DOE defines a CWAF as a warm air furnace that is industrial equipment, and that has a capacity (rated maximum input) of 225,000 British thermal units (Btu) per hour or more. 10 CFR 431.72.

In response to the February 2022 NOPR, NEEA recommended that DOE expand the scope of CWAF coverage to include 3-phase units with a capacity less than 225,000 Btu/h. NEEA asserted that failing to do so would leave a significant portion of the CWAF market unregulated, and the commenter noted that DOE has recently proposed closing a similar regulatory gap for 3-phase small commercial air conditioners and heat pumps and variable refrigerant flow air conditioners and heat pumps with cooling capacities less than 65,000 btu/h. (NEEA, No. 24 at p. 8)

In response, DOE notes that NEEA made the same recommendation in a comment submitted in response to a notice of proposed determination (''NOPD'') for CWAF energy conservation standards that was published in the **Federal Register** on April 26, 2022 (April 2022 NOPD). 87 FR 24455 (See Docket No. EERE–2019–BT–STD–0042, comment 34 at p. 6) Subsequently, in a final determination published in the **Federal Register** on December 23, 2022 (December 2022 Final Determination), DOE declined to

amend the CWAF definition to include three-phase furnaces with capacities less than 225,000 Btu/h due to the limited potential to achieve energy savings from doing so. 87 FR 78821, 78826. DOE maintains its position from the December 2022 Final Determination that such equipment represents a small portion of the overall CWAF market, which at present does not provide an opportunity for significant energy savings.

B. Updates to Industry Standards

As discussed, prior to the amendments adopted in this final rule, DOE incorporated by reference in 10 CFR part 431, subpart D, the following industry test procedures: UL 727–2006, HI–BTS 2000, ANSI Z21.47–2012, and ANSI/ASHRAE Standard 103–2007. Updated versions of each of these test standards have been published since they were incorporated into the DOE test procedure. These updated test standards are UL 727–2018 (update to UL 727–2006), AHRI 1500–2015 (update to HI–BTS 2000), ANSI Z21.47–2021 (update to ANSI Z21.47–2016), and ANSI/ASHRAE Standard 103–2022 [6] (update to ANSI/ASHRAE Standard 103–2007).

In the February 2022 NOPR, DOE noted several differences between versions of the industry standards incorporated by reference at that time and the more recent versions of the industry standards and sought comment on these changes. 87 FR 10726, 10730–10735 (Feb. 25, 2022). Stakeholder comments in response these proposals in the February 2022 NOPR are discussed in the following sections. In response to the updates to the relevant industry standards, DOE is amending the Federal test procedure for CWAFs to incorporate by reference in 10 CFR part 431, subpart D, the following updated industry standards: UL 727–2018, AHRI 1500–2015, ANSI Z21.47–2021, and ANSI/ASHRAE 103–2022.

As discussed, prior to the effective date of the amendments adopted in this final rule, the DOE test procedure for CWAFs was specified in 10 CFR 431.76. In this final rule, DOE is reorganizing the CWAF test procedures into two appendixes to subpart D of 10 CFR part 431: appendix A (using the current TE metric) and appendix B (using the new TE2 metric). DOE is reorganizing the test procedures in this way because, as discussed in section III.C of this document, DOE is establishing appendix B for determining the TE2. In contrast, the establishment of appendix A is editorial and for reorganization purposes. DOE has determined that creating separate appendixes for the determination of the two different metrics would help clarify which appendix corresponds to which metric. Relevant to both appendices, DOE is incorporating by reference the industry standards, as discussed in the following sections.

1. UL 727

The CWAF test procedure, prior to the amendments adopted in this final rule, required use of those procedures contained in UL 727–2006 that are relevant to the steady-state efficiency measurement (*i.e.,* UL 727–2006 sections 1 through 3; 37 through 42 (except for sections 40.4 and 40.6.2 through 40.6.7); 43.2; and 44 through 46).

In the February 2022 NOPR, DOE proposed to amend the test procedure to reference UL 727–2018. 87 FR 10726, 10731 (Feb. 25, 2022). Additionally, DOE proposed to explicitly identify the provisions of UL 727–2018 that are applicable to the DOE test procedure for CWAFs, because DOE tentatively determined that the scope section of UL 727–2018 is not applicable since the scope of the DOE test procedure is defined separately in 10 CFR 431.76(a). *Id.*

The February 2022 NOPR also discussed that UL 727–2018 has different language pertaining to temperature measurements and using potentiometers and thermocouples, and it also incorporates different ANSI references regarding these topics as compared to UL 727–2006. DOE tentatively determined that there was not sufficient evidence to indicate that the updates in UL 727–2018 would not meet the requirements of EPCA at 42 U.S.C. 6314(a)(2) and (3); therefore, DOE proposed to also incorporate by reference the updated ANSI standard (*i.e.,* ANSI/ASTM E230/E230M–17) referenced by UL 727–2018. 87 FR 10726, 10732 (Feb. 25, 2022).

Finally, in the February 2022 NOPR, DOE discussed that UL 727–2018 references NFPA 97M, ''Standard Glossary of Terms Relating to Chimneys, Gas Vents and Heat Producing Appliances'' (NFPA 97M) for definitions of the terms ''combustible'' and ''noncombustible'' but does not specify which version of NFPA 97M. DOE tentatively concluded that NFPA 97M is an outdated standard and that NFPA 97–2003, ''Standard Glossary of Terms Relating to Chimneys, Vents, and Heat-Producing Appliances'' (NFPA 97–2003) should be referenced for these definitions instead. Therefore, DOE proposed to replace references to NFPA 97M in UL 727–2018 with references to NFPA 97–2003. *Id.*

DOE received comments from Daikin, Carrier, and AHRI supporting the proposal to reference NFPA 97–2003 rather than NFPA 97M. (Daikin, No. 25 at p. 1; Carrier, No. 22 at p. 2; AHRI, No. 17 at p. 2) DOE did not receive any comments in response to the proposals related to incorporating by reference UL 727–2018.

For the reasons summarized in this document and discussed in the February 2022 NOPR, DOE is amending the DOE test procedure to incorporate by reference UL 727–2018, as well as incorporating the additional industry standards related to UL 727–2018.

2. HI BTS and AHRI 1500

Prior to the amendments adopted in this final rule, DOE's test procedure for oil-fired CWAFs referenced sections of HI BTS–2000 that are relevant to fuel oil analysis and calculating percent flue loss (*i.e.,* HI BTS–2000 sections 8.2.2, 11.1.4, 11.1.5, and 11.1.6.2). (*See* 10 CFR 431.76(c)(2) and (e)(2) in effect as of January 1, 2022.) DOE's test procedure included these provisions because DOE previously determined that UL 727 does not provide a procedure for calculating the percent flue loss of the furnace, which is necessary in calculating the TE. Therefore, DOE incorporated by reference provisions from HI BTS–2000 to calculate the flue loss for oil-fired CWAFs. 69 FR 61916, 61917, 61940 (Oct. 21, 2004).

In the February 2022 NOPR, DOE explained that in 2015, HI BTS–2000 was replaced with AHRI 1500–2015. 87 FR 10726, 10732 (Feb. 25, 2022). The February 2022 NOPR also discussed that the DOE test procedure references fuel oil analysis requirements in HI BTS–2000 and that the fuel oil analysis requirements are different in AHRI 1500–2015. DOE tentatively determined that the differences would not impact the performance of a CWAF under test because the fuel oil analysis requirements in AHRI 1500–2015 are essentially equivalent to those in HI BTS–2000. As a result, DOE proposed to incorporate by reference AHRI 1500–2015, including its fuel oil analysis specifications. 87 FR 10726, 10733 (Feb. 25, 2022).

In addition, in the February 2022 NOPR DOE noted that section 11.1.4 of HI BTS–2000 requires that the carbon dioxide (CO_2) value used in the calculation of the dry flue gas loss for

[6] The February 2022 TP NOPR proposed to incorporate by reference ANSI/ASHRAE 103–2017; however, in 2022, ASHRAE published a more recent version of the standard, ANSI/ASHRAE 103–2022.

oil must be the measured CO_2,[7] while section C7.2.4 of AHRI 1500–2015 (previously section 11.1.4 in HI BTS–2000) includes the option to calculate CO_2 using the measured oxygen (O_2) value instead of directly measuring the CO_2 value. 87 FR 10726, 10733 (Feb. 25, 2022). DOE tentatively determined that calculating CO_2 using a measured O_2 value, as specified in AHRI 1500–2015, would provide results equivalent to the CO_2 measurement currently required by the DOE test method, and that allowing a calculated value of CO_2 would harmonize with the latest industry standard without increasing test burden. As such, DOE proposed to adopt the optional method specified in AHRI 1500–2015 that allows for calculation CO_2 using a measured O_2 value and requested comment on this proposal. *Id.*

AHRI supported the proposal to adopt the optional method specified in AHRI 1500–2015 that allows for calculation CO_2 using a measured O_2 value. (AHRI, No. 17 at p. 2) DOE did not receive any other comments related to its proposal to incorporate by reference AHRI 1500–2015. Therefore, for the reasons discussed here and in the February 2022 NOPR, DOE is adopting the proposals related to this topic made in the February 2022 NOPR.

3. ANSI Z21.47

Prior to the amendments adopted in this final rule, the CWAF test procedure required the use of procedures contained in ANSI Z21.47–2012 that are relevant to the steady-state efficiency measurement (*i.e.,* sections 1.1, 2.1 through 2.6, 2.39, and 4.2.1 of ANSI Z21.47–2012).

In the February 2022 NOPR, DOE proposed to replace the incorporation by reference of ANSI Z21.47–2012 with ANSI Z21.47–2021. 87 FR 10726, 10734 (Feb. 25, 2022). DOE explained in the February 2022 NOPR that all of the differences it had identified between the two versions of the standard were non-substantive and would not impact the test method or result. *Id.* However, DOE also noted that ANSI Z21.47–2012 requires burner operating characteristics tests to be conducted with test gas G (*i.e.,* butane-air), while ANSI Z21.47–2021 allows testing for premix burners to be done with test gas H (*i.e.,* propane-air) instead of test gas G at the manufacturer's option. In the February 2022 NOPR, DOE stated that the burner operating characteristics tests (including which test gas is used for them) do not affect the TE measurement of a CWAF and requested comment on whether the option provided in section 5.4a of ANSI Z21.47–2021 to use test gas H when performing the three burner characteristics tests would impact the representativeness or burden of the thermal efficiency test. *Id.*

Lennox, Daikin, Carrier, and AHRI stated that section 5.4a of ANSI Z21.47–2021 is used for safety certification testing, and is unrelated to TE, and, therefore, recommended DOE should not reference this section. (Lennox, No. 19 at p. 3; Daikin, No. 25 at p. 2; Carrier, No. 22 at p. 2; AHRI, No. 17 at p. 2) Rheem also stated that the thermal efficiency test is not affected by the burner operating characteristics test. (Rheem, Public Meeting Transcript, No. 15 at p. 11) DOE received no other comments related to its proposal to incorporate by reference ANSI Z21.47–2021.

For the reasons discussed here and in the February 2022 NOPR, DOE is amending the test procedure for CWAFs to replace the incorporation by reference of ANSI Z21.47–2012 with ANSI Z21.47–2021. In addition, DOE agrees with stakeholders that section 5.4a of ANSI Z21.47–2021 does not impact TE, and, therefore, does not need to be referenced in the DOE test procedure for CWAFs. As such, DOE is not including reference to this section in the DOE test procedure.

4. ANSI/ASHRAE 103

Prior to adoption of the amendments in this final rule, DOE's test procedure for gas-fired condensing CWAFs referenced ANSI/ASHRAE 103–2007. In the February 2022 NOPR, DOE proposed to amend the test procedure by removing the reference to ANSI/ASHRAE 103–2007 and to instead reference ANSI/ASHRAE 103–2017, having determined that the only differences between the standards in the sections utilized by the CWAF test method were editorial in nature. 87 FR 10726, 10735. An updated version of ANSI/ASHRAE 103, ANSI/ASHRAE 103–2022, has since been released. DOE reviewed ANSI/ASHRAE 103–2022 and determined that, for the sections utilized in the test methods for CWAFs, there is no difference between the two versions of the standard.

DOE did not receive any comments in response to its proposal to reference ANSI/ASHRAE 103–2017.

Accordingly, for the reasons explained previously and because DOE has found there is no difference between ANSI/ASHRAE 103–2017 and ANSI/ASHRAE 103–2022 in the sections utilized for the CWAFs test procedure, DOE is amending the test procedures for CWAFs to incorporate by reference ANSI/ASHRAE 103–2022.

C. Thermal Efficiency Two Metric

As previously discussed, EPCA requires that the test procedures for CWAFs be those generally accepted industry testing procedures or rating procedures developed or recognized by AHRI or ASHRAE, as referenced in ASHRAE Standard 90.1. (42 U.S.C. 6314(a)(4)(A)) If such an industry test procedure or rating procedure is amended, the Secretary shall amend the test procedure for the product as necessary to be consistent with the amended industry test procedure or rating procedure unless the Secretary determines, by rule, published in the **Federal Register** and supported by clear and convincing evidence, that to do so would not meet the requirements in 42 U.S.C. 6314(a)(2) and (3) related to representative use and test burden.[8] (42 U.S.C. 6314(a)(4)(B))

In the February 2022 NOPR, DOE tentatively determined that a test procedure that includes jacket loss and accounts for part-load operation would better produce test results that reflect energy efficiency, energy use, and estimated operating costs of CWAFs during a representative average use cycle. 87 FR 10726, 10735 (Feb. 25, 2022). Therefore, DOE proposed to account for these factors by establishing a new test procedure and metric for CWAFs, termed TE2. DOE proposed to establish appendix A to subpart D of 10 CFR part 431 as the test method for calculating TE and to establish a new appendix B to subpart D of 10 CFR part 431, which would contain the new test method for TE2. The proposed test procedure at appendix B would generally adopt the same changes proposed for the current test procedure at appendix A but would additionally account for jacket losses and part load operation. 87 FR 10726, 10735–10737 (Feb. 25, 2022). Additionally, DOE proposed that manufacturers would be permitted to make voluntary representations using TE2, and that mandatory use of the TE2 test procedure

[7] The DOE test procedure at 10 CFR 431.76(d) also states that CO_2 must be measured.

[8] 42 U.S.C. 6314(a)(2) requires that test procedures be reasonably designed to produce test results which reflect energy efficiency, energy use, and estimated operating costs of a type of industrial equipment (or class thereof) during a representative average use cycle (as determined by the Secretary), and shall not be unduly burdensome to conduct. 42 U.S.C. 6314(a)(3) requires that if the test procedure is a procedure for determining estimated annual operating costs, such procedure shall provide that such costs shall be calculated from measurements of energy use in a representative average-use cycle (as determined by the Secretary), and from representative average unit costs of the energy needed to operate such equipment during such cycle.

would be required at such time as compliance is required with amended energy conservation standards based on TE2, should DOE adopt such standards. 87 FR 10726, 10737.

DOE received several comments supporting DOE's proposed test procedure for TE2 in the February 2022 NOPR. NYSERDA generally supported DOE's efforts to establish the TE2 metric because it will improve representativeness of CWAF field performance. (NYSERDA, No. 16 at p. 2) The Joint Advocates supported DOE's proposal to establish the TE2 metric, noting that the current TE metric only accounts for flue losses, which provides little incentive to manufacturers to adopt technologies that impact efficiency in the field, and not just TE. The Joint Advocates, therefore, stated that the TE2 metric would better reflect a representative average use cycle and would encourage design changes that would reduce energy consumption. (Joint Advocates, No. 21 at p. 1)

DOE also received several comments opposing the proposed test procedure for TE2. Lennox stated that the proposed new TE2 efficiency metric and methodology is a significant change that would significantly increase the test burden, with the commenter asserting that DOE has not provided supporting data that would justify these changes. Lennox argued that introducing such changes at the NOPR stage did not allow stakeholders sufficient time to fully evaluate their impacts and provide comment. Lennox noted that in standards rulemakings, DOE has declined to adopt or propose more-stringent standards due to lack of clear and convincing evidence that standards would be economically justified, and the commenter asserted that in their review of current CWAF test procedure and standards rulemakings, DOE has not provided clear and convincing evidence to establish the TE2 metric. Therefore, Lennox recommended that DOE should limit its test procedure amendments to those related to TE; otherwise, if DOE continues to pursue TE2, the commenter argued that DOE should revert back to the RFI stage so as to allow for more stakeholder engagement regarding the proposals in the TE2 metric. Lennox also argued against adoption of the TE2 metric because of the associated cumulative regulatory burden. (Lennox, No. 19 at pp. 1–2) AHRI opposed adoption of the TE2 test procedure and metric because there was no reference to such a proposal for a new metric or any form of part-load testing in the May 2020 RFI and because DOE failed to include key stakeholders in the development of TE2. In addition, the commenter stated that there is not sufficient data or justification indicating that such a change to the metric would result in any additional energy savings. AHRI stated that the proposal to adopt the TE2 metric is premature, and that if DOE wishes to do so, DOE should go back to the RFI stage, conduct tests, and release data showing the new test procedure is significantly more representative than the current test procedure. AHRI also argued that the proposed TE2 metric is not economically justified, and that if DOE were to adopt energy conservation standards based on such a metric, a crosswalk would run the risk of inadvertently pushing compliant units out of the market to produce a standard that can only be met through use of condensing technology. Therefore, AHRI urged DOE to continue using the current TE metric. (AHRI, No. 17 at pp. 2–3) Daikin agreed with AHRI on this issue. (Daikin, No. 25 at p. 2) AGA and APGA stated that while they are supportive of AHRI's comments overall, they wish to reiterate that they do not support DOE adopting the TE2 metric because it is not clear that it is more representative than the existing DOE test procedure, and because there is no evidence to support that the proposed TE2 test procedure would result in a significant change in energy savings. AGA and APGA also expressed concern that adopting energy conservation standards based on the TE2 metric would result in a standard that could only be met through use of condensing technology. (AGA and APGA, No. 23 at p. 2) Carrier acknowledged that including jacket loss and part load operation in the thermal efficiency metric would create a more representative metric but asserted that more investigation and analysis needs to be completed before doing so. (Carrier, No. 22 at p. 2)

In response, DOE notes that the TE metric only accounts for flue losses as measured while the CWAF is operating at its maximum input rate. Through testing of other similar appliances (*e.g.,* consumer furnaces), DOE has found that the efficiency can vary when the unit operates at different fuel input rates; hence, test methods for such appliances require testing at multiple fuel input rates. Therefore, DOE concludes that including more than one fuel input rate will improve representativeness of CWAF energy efficiency as compared to only testing at the maximum input rate, since it will capture performance at additional operating points. Regarding jacket losses, DOE has found that CWAFs are often installed outside, and as a result, jacket losses can contribute significantly to overall equipment energy use. Thus, DOE concludes that accounting for jacket losses results in a metric that is more representative of CWAF performance than a metric that ignores such losses. Further, DOE notes that the methods proposed for determining TE2, which require testing to determine jacket loss and TE, are already in use in either industry standards (*e.g.,* ANSI Z21.47) or DOE's own test method for CWAFs. Therefore, manufacturers should be familiar with the methods of testing such that reverting to an RFI would not be necessary to provide time for additional input. While DOE recognizes that additional testing at the minimum input rate and for jacket loss would increase test burden, which is discussed in more detail in section III.G, of this document, DOE has concluded that the benefit of the increased representativeness offsets the additional test burden. Additionally, DOE would make clear that representations using the TE2 metric are not mandatory until such time as compliance with a standard denominated in terms of the TE2 metric is required, should DOE adopt such a standard. In this rulemaking, DOE is not amending standards to be based on TE2; rather, DOE is making available an optional test method, should manufacturers wish to make representations of efficiency using a more comprehensive metric. If, in a future energy conservation standards rulemaking, DOE considers whether to adopt an energy conservation standard based on the TE2 metric, DOE would further weigh the benefits and burdens of doing so at that time, including the potential additional energy savings that could be achieved through use of TE2 as the regulatory metric as compared to TE and whether there is economic justification for doing so. Based on these considerations, DOE has determined to adopt the proposals in the February 2022 NOPR regarding establishing TE2 and appendix B. The following sections discuss the different components of TE2 (*i.e.,* jacket loss and part-load operation) and specific comments from interested parties on those topics in more detail.

1. Jacket Loss

In the February 2022 NOPR, DOE proposed to adopt section 5.40 of ANSI Z21.47–2021 for the purpose of measuring jacket loss for the TE2 metric. 87 FR 10726, 10737 (Feb. 25, 2022). DOE also proposed to incorporate the jacket loss into the TE2 metric by subtracting it (along with flue losses) from 100 percent after applying a jacket loss factor to account for installation

location. DOE proposed to apply a jacket loss factor of 1.7 for CWAFs designed for indoor installation in an unheated space (*i.e.,* isolated combustion system), 3.3 for CWAFs designed for outdoor installation (including, but not limited to, CWAFs that are weatherized, or approved for resistance to wind, rain, or snow), or 0 for CWAFs designed for installation indoors within a heated space, which is consistent with the values found in ANSI/ASHRAE 103–2017. *Id.* DOE received multiple comments regarding the proposed jacket loss test procedure to be used in determining TE2.

NEEA, the CA IOUs, and the CEC generally supported DOE's proposals to include jacket loss in the TE2 metric. (NEEA, No. 24, at p. 1; CA IOUs, No. 20, at p. 1; CEC, No. 18, at p. 2) The CA IOUs and the CEC also specifically noted that the jacket loss factors are appropriate. (CA IOUs, No. 20, at p. 1; CEC, No. 18, at p. 2)

Daikin, Carrier, and AHRI generally opposed DOE's proposal to include jacket loss in the TE2 metric. (Daikin, No. 25 at p. 2; Carrier No. 22 at pp. 2–3; AHRI No. 17 at p. 3) More specifically, Daikin stated that the burden for conducting a jacket loss test is excessive and is duplicative given that ASHRAE Standard 90.1 already requires a maximum jacket loss of 0.75 percent. (Daikin, No. 25 at p. 2) Carrier also stated that the jacket loss test, in particular the setup and data acquisition, creates additional burden on manufacturers, and that this increases with the size of the unit being tested. (Carrier No. 22 at pp. 2–3) Additionally, Carrier stated that more clarity is needed on how to properly run the test, as the industry has several methods to conduct it. (*Id.*) Carrier stated that while other equipment includes jacket loss in their calculation of efficiency (*e.g.,* residential furnaces and AFUE), it is hard to scale this to CWAFs. Carrier also noted that with ASHRAE Standard 90.1 limiting jacket loss to 0.75 percent, many large CWAFs may be very close to this value. Additionally, Carrier stated that including the 3.3 factor for weatherized equipment creates a sizeable impact to the thermal efficiency, and that if a future energy conservation standard for TE2 is not set correctly, it would require products to operate in a range that condensing may occur. (*Id.*) AHRI stated that jacket losses are measured on the furnace jacket, not on the rooftop unit (RTU) jacket,[9] and that furnace jackets are typically embedded far inside the RTU, which requires the CUAC/HP to be taken apart in order to reach the CWAF jacket. AHRI stated that this is an extremely burdensome task, and that manufacturers are already required to comply with ASHRAE Standard 90.1, which requires jacket loss to be less than 0.75 percent (although AHRI also noted that only the worst-case models are tested). AHRI also stated that the additional granularity of a thermal efficiency rating that incorporates jacket loss would be negligible. (AHRI No. 17 at p. 3 and 5) Rheem stated that jacket losses have to be below 1.5 percent for equipment sold in Canada and below 0.75 percent for equipment to comply with ASHRAE Standard 90.1. (Rheem, Public Meeting Transcript, No. 15 at p. 24)

In response, DOE recognizes that performing an additional test to determine the jacket loss of a CWAF is more burdensome than not testing for jacket loss; however, as previously discussed, DOE has concluded that including jacket loss in the TE2 metric will provide a more representative measure of energy efficiency. DOE disagrees with AHRI that jacket losses would be negligible, as the percentage loss is included directly in the TE2 calculation. As noted by Carrier, many CWAFs may be close to the 0.75 percent requirement. Because the jacket loss percentage is multiplied by the jacket loss factor, for weatherized CWAFs designed to be installed outdoors (which represent the majority of CWAFs on the market and which have a jacket loss factor of 3.3) a jacket loss of 0.75 percent could result in a difference in TE2 of nearly 2.5 percent as compared to a unit with negligible jacket losses, which DOE considers significant.

Regarding Carrier's concerns that burden increases with the size of the unit, DOE acknowledges that additional testing burden would be incurred if manufacturers decide to test according to TE2, and may increase more significantly for larger units. However, DOE has concluded that this burden would be outweighed by the anticipated improvement in representativeness. DOE also notes that CWAFs are eligible to use alternative efficiency determination methods (AEDMs,), which are typically used by manufacturers to mitigate burden, especially for testing larger commercial equipment. Further discussion of the testing burden posed by TE2 is included in section III.G. of this document.

Although DOE recognizes that TE2 testing would be more burdensome as compared to TE, DOE has concluded that the TE2 test method is not unduly burdensome. Further discussion of the cost of testing is included in section III.G of this document. Additionally, DOE notes that the use of TE2 is optional at this time, and this final rule does not amend or otherwise impact the energy conservation standards for CWAFs. If DOE should propose amended standards in the future denominated in terms of the TE2 metric, DOE would consider concerns regarding condensing operation at that time. Lastly, DOE agrees with Carrier that additional clarity regarding how to conduct the test is warranted. In particular, DOE notes that section 5.40 of ANSI Z21.47–2021 is not specific as to what constitutes the ''jacket.'' Therefore, DOE clarifies that it applies the term as defined by the CSA Group standard CSA P.8–2022, ''Thermal Efficiencies of Industrial and Commercial Gas-Fired Package Furnaces.'' CSA P.8–2022 defines the jacket as the surfaces surrounding the heating section of the furnace. The jacket includes all surfaces separating the heating section from the supply air, outside air, or condenser section, including the bottom surface separating the heating section from the basepan. DOE has included a description of the jacket in accordance with this definition in section 1.2 of appendix B.

2. Part-Load Performance

In the February 2022 NOPR, DOE proposed to require that, for CWAFs with two-stage or modulating burners, the flue loss be determined at both the maximum and minimum input rates on the nameplate of the unit and that the jacket loss be determined at the maximum input rate and optionally at the minimum input rate. If the jacket loss were determined only at the maximum input rate, DOE proposed to assign an equivalent value at the minimum input rate. DOE proposed that TE2 would then be calculated as the average of the efficiencies determined at both the maximum and minimum input rates using the flue loss and jacket loss determined at each input rate, which reflects an average use case of 50 percent of the time operating at full load and 50 percent of the time operating at part-load. 87 FR 10726, 10738 (Feb. 25, 2022).

In response to the February 2022 NOPR, AHRI stated that unlike for air-conditioning equipment, the range in variability in performance between part-load and full-load is small and that adding part-load performance into the

[9] RTUs are packaged units that can include both a commercial unitary air conditioner (CUAC) and a CWAF and are designed for installation on the rooftop of commercial buildings.

measurement of CWAF performance would not add to market clarity, especially given the burden of retesting all CWAFs on the market to assess performance according to such a test procedure. (AHRI, No. 17 at pp. 3–4)

DOE also received comments from several stakeholders supporting the inclusion of part-load performance in TE2. Specifically, NEEA supported the inclusion of part-load operation in the proposed TE2 metric and noted that they have observed cases where CWAFs have had reduced efficiency at part-load when compared to full-load. Therefore, NEEA concluded that including part-load efficiency in TE2 will create a more representative efficiency metric. (NEEA, No. 24 at p. 6) The CA IOUs supported DOE's efforts to incorporate part-load operation within the TE2 metric and agreed with DOEs assertion in the February 2022 NOPR that most CWAFs have two or more stages of heating, that CWAFs spend a substantial time operating in part-load, and that including part-load performance in a TE2 metric would increase representativeness. (CA IOUs, No. 20 at pp. 1–2) The CEC supported including part-load performance in the TE2 metric and noted that CWAFs spend a large percentage of time in part-load operation. (CEC, No. 18 at p. 2) Carrier stated that part-load performance should be part of the CWAF test procedure. (Carrier, No. 22 at pp. 3–4)

As discussed previously, DOE has observed during testing of similar products that efficiency can differ at full load as compared to part load and has concluded that adding testing during part-load operation would improve representativeness as compared to a test method that only requires operation at the maximum input. Therefore, DOE is adopting part-load testing in the TE2 metric, as initially proposed in the February 2022 NOPR. Regarding the need to re-test CWAFs currently rated to the TE metric, DOE notes that testing to determine TE2 would not be required until the compliance date of any energy conservation standards based on that metric. However, DOE concludes that the improved representativeness of the TE2 metric would outweigh the additional test burden.

DOE also received several comments regarding the proposal to weight both full-load and part-load operation at 50 percent when calculating TE2.

The CA IOUs encouraged DOE to continue to evaluate what full-load and part-load weighting factors would improve representativeness of an average use cycle; however, the CA IOUs stated that they do not oppose DOE's proposal to use 50 percent weighting factors, given the lack of national data on such full-load and part-load performance. (CA IOUs, No. 20 at p. 2) The CEC supported the DOE's proposal to equally weight full-load and part-load operation, but also stated that DOE should continue to evaluate the average use cycle of CWAFs. (CEC, No. 18 at p. 2)

NEEA recommended DOE reconsider the proposed weighting of low and high fire in the TE2 metric. NEEA presented a figure showing the modeled proportion of time at high fire and low fire for three locations in Canada (Winnipeg, Montreal, and Toronto) and two building types (retail and warehouse). The commenter stated that modeling has shown that, in colder North American climate zones (5A, 6A, and 7), the ratio of high fire to low fire is only close to 50/50 for warehouses in these cold climates, but for other use types, the ratio was closer to 30 percent at low fire and 70 percent at high fire. NEEA stated that because the U.S. generally has warmer climate zones than Canada, NEEA would expect increased part-load operation in the U.S., and, therefore, it argued that a 50/50 weighting would not be representative of CWAFs in the U.S. (NEEA, No. 24 at pp. 6–7)

The Joint Advocates encouraged DOE to further consider alternative weighting factors for full-load and part-load operation that they argue may be more representative of average use. The Joint Advocates also noted that the February 2022 NOPR refers to an estimate from NEEA that CWAFs spend about 10 to 20 percent of their time operating at full load, but that DOE did not use that estimate because the Department tentatively determined that the climate regions from which the estimate was derived were not representative of the U.S. The Joint Advocates urged DOE to reconsider the NEEA estimate because they understand that while total operating hours will vary significantly based on climate region, the percentage of time spent at full load is relatively constant across climate regions. (Joint Advocates, No. 21 at p. 2)

Rheem stated that it is not appropriate to average the maximum and minimum thermal efficiencies and noted that in ANSI/ASHRAE 103 (*i.e.,* the ASHRAE test method for consumer furnaces) there is a method for determining the weightings, and the unit does not run at the maximum input very often. Rheem suggested that the minimum input rate should be weighted more than the maximum input rate. (Rheem, Public Meeting Transcript, No. 15 at pp. 27–28) Daikin also stated that 50 percent weighting factors for full-load and part-load performance are not appropriate. Further, Daikin stated that the approach to weighting full-load and part-load operation in ANSI/ASHRAE 103 cannot be used for CWAFs because it was generated for residential products and the operational profile of commercial products is radically different. (Daikin, No. 25 at p. 2) Carrier commented that time spent at part-load is much longer than full-load, and, therefore, DOE's proposed 50 percent weighting factor is not appropriate. Carrier recommended that more investigation and analysis should be performed to determine appropriate weighting factors that account for all types of furnaces (*i.e.,* two-stage, multi-stage, and modulating). (Carrier, No. 22 at pp. 3–4) AHRI also stated that the 50 percent weighting factors proposed by DOE in the February 2022 NOPR are not representative. (AHRI, No. 17 at p. 4)

In response, DOE notes that the modeling presented by NEEA shows that in the three regions in Canada, the percentage of time a CWAF could operate at high fire versus low fire varied greatly, with CWAFs in some applications operating as little as approximately 25 percent of time in high fire (and 75 percent in low fire), while CWAFs in other applications were modeled to operate more than 70 percent of time in high fire (and 30 percent in low fire). Warehouses in all three locations were modeled to operate in high fire over 50 percent of the time, while retail buildings in all three locations were modeled to operate in high fire less than 50 percent of the time. Although NEEA claimed that the warmer climate in the U.S. would result in less time operating at full load, that is not necessarily the case as CWAFs in the U.S. would likely be sized differently from those in Canada due to the reduced heating loads. As noted by the Joint Advocates, while total operating hours will vary significantly based on climate region, the percentage of time spent at full load could remain relatively constant across climate regions. Although several commenters asserted that weighting equally at 50 percent in full-load and in part-load is not representative, no other commenters presented alternative data, nor is DOE aware of any data that would be useful to better characterize the appropriate weighting factors. Therefore, in this final rule, DOE is adopting a calculation method that weights full-load and part-load operation equally. Should DOE become aware of any new data regarding time spent operating at each input rate or data specific to different furnace types in the future, DOE could consider

revising the calculation accordingly in a subsequent rulemaking.

D. Electrical Energy Consumption

In the February 2022 NOPR, DOE tentatively determined not to account for electrical energy consumption of CWAF auxiliary power components (*e.g.,* controls and/or combustion blowers/fans) or the supply air fan in the CWAF test procedure. 87 FR 10726, 10739 (Feb. 25, 2022). Specifically, regarding supply fan energy consumption, DOE noted that CWAFs are typically installed within the same cabinet as a CUAC and that this energy is generally accounted for in the current CUAC test procedure, although furnace-only operation hours are not included. As such, DOE tentatively determined that energy consumption during furnace-only operation hours would be better addressed in a future amendment to the CUAC test procedure. *Id.* Regarding auxiliary power consumption, DOE tentatively determined that including such power consumption into a CWAF performance metric would have a negligible impact on the measured energy efficiency of a CWAF. *Id.*

In response to the February 2022 NOPR, NYSERDA encouraged DOE to measure fan energy consumption during furnace-only operation in the CWAF test procedure. (NYSERDA, No. 16 at p. 2) NEEA also recommended that DOE account for electricity consumption used in a CUAC, including fan and auxiliary energy use, that relates to CWAF energy consumption. In relation to DOE's tentative determination in the February 2022 NOPR that such energy consumption would be better addressed in a future amendment to the CUAC test procedure, NEEA stated such an approach would likely leave out the portion of the hours during the year where fan energy is consumed when only the CWAF is operating. NEEA stated that it understands DOE's desire for fan energy to ''be captured in a single test procedure,'' but the commenter argued that this goal is not achievable when cooling and heating efficiencies are regulated separately and also not achievable in a market as diverse as that for commercial HVAC. Additionally, NEEA mentioned that because fan and other auxiliary electrical end uses are integral to the function of any CWAF, it is critical than any CWAF TP and performance metric account for them. (NEEA, No. 24 at p. 4)

After carefully considering these comments, DOE maintains its position presented in February 2022 NOPR that, at present, integrating the auxiliary electrical energy consumption into the efficiency metric for CWAF would result in negligible impact. Further, DOE also maintains that the fan efficiency is better accounted for in a single test method that addresses all fan energy consumption. Accordingly, DOE is proposing to address the supply air fan energy use for CWAFs, including during operation in heating-only mode, in the ongoing CUACs test procedure rulemaking. Therefore, DOE is not adopting measures of auxiliary electrical energy use or the electrical energy use of the supply air fan in this final rule.

E. Other Test Procedure Updates and Clarifications

In the February 2022 NOPR, DOE used the terms ''vent hoods,'' ''vent pipes,'' and ''flue outlets'' to describe the section of a CWAF that carries the flue gas away from the unit. DOE received a comment from AAON recommending DOE use the term ''flue outlets,'' because it is the most accurate way to describe those components. (AAON, No. 14 at p. 1) In response, DOE has determined it appropriate to use only the term ''flue outlet(s)'' in order to prevent confusion associated with using multiple terms to refer to the same outlet. As such, DOE will use the term ''flue outlet(s)'' in this final rule, as well as in appendix A and appendix B.

1. Flue Temperature Measurement in Models With Multiple Flue Outlets

In the February 2022 NOPR, DOE proposed to add instructions to clarify the test method for models with multiple flue outlets. 87 FR 10726, 10740 (Feb. 25, 2022). DOE proposed that measurements used to calculate TE (*e.g.,* flue gas temperature, CO_2 in flue gasses), be made separately for each flue outlet, and that they are weighted proportionally to the size of each flue outlet when calculating flue loss. Further, DOE proposed that test requirements, such as determining when equilibrium conditions occur based on the flue gas temperature, are determined based these weighted measurements. DOE noted that this proposal is predicated on the assumption that the amount (*i.e.,* mass flow) of flue exhaust exiting each flue outlet is proportional to the outlet size. DOE recognized that ''size'' of the flue outlet may be measured in various ways, and, therefore, the Department proposed to specify that flue outlet size would be determined by calculating the outlet face area. DOE sought comments on these proposals. *Id.*

Lennox stated that the size of the flue outlet may not be representative of the amount of flue exhaust passing through the flue outlet, and that DOE should consider relying on the supplemental testing instructions or review the input capacity for each heating section as the weighted average instead of the cross-sectional area of the flue outlet. (Lennox, No. 19 at p. 3) AHRI and Carrier supported clarifying how to test units with multiple flue outlets but recommended that the measurement and performance rating for each flue outlet should be based on input rating of each furnace module instead of the size of the flue outlet. (AHRI, No. 17 at p. 4; Carrier, No. 22 at p. 4)

Based on these comments DOE understands that the flue outlet size may not directly correspond to the mass flow of flue gases exiting from that outlet. Consequently, DOE agrees that the fuel input rating for each furnace module would be a better indicator of the flue gases exiting the outlet for that specific module. Therefore, DOE amends the test procedure to clarify that for units with multiple flue gas outlets, the measurements used to calculate TE (*e.g.,* flue gas temperature, CO_2 in flue gasses) are to be made separately for each flue outlet, and are to be weighted proportionally to the input capacity associated with the furnace module.

2. Flue Temperature Measurement in Models With Vent Space Limitations

In the February 2022 NOPR, DOE noted that section 5.16 of ANSI Z21.47–2021 specifies measuring the flue gas temperature using nine individual thermocouples placed in specific locations; however, these sections do not provide guidance on how to measure the flue gas temperature if the vent size constrains the space where the thermocouples are to be placed to the point that normal operation of the unit is inhibited when nine thermocouples are installed. 87 FR 10726, 10740 (Feb. 25, 2022). DOE proposed to specify in the DOE test procedure that when testing gas-fired and oil-fired CWAFs, the flue gas temperatures shall be measured using nine individual thermocouples when the flue outlet is larger than 2 inches in diameter and may optionally be measured using five individual thermocouples when the flue outlet is 2 inches or smaller in diameter, which DOE noted aligns with the approach in ANSI/ASHRAE 103–2017. *Id.* at 87 FR 10741.

AAON stated that flue outlet geometry in CWAFs can vary in shape and that the diagram referenced in ANSI/ASHRAE 103 only accounts for a circular geometry. Consequently, AAON recommended that the number thermocouples needed for testing should be determined by the cross-

sectional area of the flue outlet. (AAON, No. 14 at p. 1) Similarly, Lennox noted that not all flue outlets are round, and, therefore, the commenter suggested that the number of thermocouples used during the test should be determined using the face area of the flue outlet. (Lennox, No. 19 at p. 3) Carrier agreed that fewer thermocouples should be used for units with smaller flue outlets, but also recommended the determination be based on cross-sectional face area, not diameter, since flue outlets are not always circular. (Carrier, No. 22 at p. 4) AHRI supported DOE's proposal that the number of thermocouples used be dependent on the flue outlet size; however, similar to other commenters, AHRI recommend that DOE base the determination of how many thermocouples to use on the cross-sectional area of the outlet, rather than the diameter. AHRI also further recommended DOE review and align its provisions with the requirement outlined in Figure 10 of AHRI 103. (AHRI, No. 17 at p. 4)

DOE agrees that the determination of the number of thermocouples used in the flue outlet should be based on the area of the flue outlet, rather than diameter, because some flue outlets may not be circular. Therefore, DOE is adopting a modification to its February 2022 proposal so that the optional allowance to use 5 thermocouples rather than 9 in models with flue outlets that are 2 inches or less in diameter applies based on the cross-sectional area of the flue outlet. For a circular flue with a diameter of 2 inches, the area would be 3.14 square inches; thus, DOE is amending the test procedure to allow optional use of 5 thermocouples when testing models with a flue outlet that has a cross sectional area of 3.14 square inches or less.

3. Flue Loss Determination

Section 2.39 of ANSI Z21.47–2012 and section 5.40 of ANSI Z21.47–2021 reference Annex I for the determination of flue loss that is used in the TE calculation. Annex I includes two methods for determining flue loss—one method that uses a calculation, and one method that uses nomographs shown in Figures I.1 and I.2 of ANSI Z21.47–2021. The nomograph method may only be used when the heating value, specific gravity, and flue gas CO_2 of a CWAF fall within a specified range.[10] If these conditions are met, either calculation method may be used. In the February 2022 NOPR, DOE proposed to require that the calculation method must be used when determining flue loss because the nomograph method is not applicable for all tests, and the calculation method is likely to provide better repeatability by eliminating subjective differences in interpreting the nomograph. 87 FR 10726, 10741 (Feb. 25, 2022).

DOE received comments from Daikin, Carrier, Lennox, Rheem, and AHRI that supported this proposal, and received no other comments on this topic. (Daikin, No. 25 at p. 3; Lennox, No. 19 at p. 3; Carrier, No. 22 at p. 5; Rheem, Public Meeting Transcript, No. 15 at p. 21; AHRI, No. 17 at p. 4) Based on the previously discussed rationale, DOE has determined that requiring the calculation method will help improve test repeatability. As such, DOE is requiring that the calculation method, not the nomograph method, from Annex I in ANSI Z21.47–2021 be used for the determination of flue loss.

4. General Approach

In response to the February 2022 NOPR, DOE received several comments regarding its general approach to the test method for CWAFs.

AGA and APGA recommend DOE consider implementing the recommendations for the recent National Academies of Sciences Engineering and Medicine (NASEM) on appliance standards rulemakings, whether for test procedures or energy conservation standards. (AGA and APGA, No. 23 at pp. 2–3)

Given that this is a test procedure rulemaking for which DOE must meet specific statutory criteria as outlined in 42 U.S.C. 6314, the recommendations in the NASEM report, which pertain specifically to the processes by which DOE analyzes energy conservation standards, are not applicable. DOE will consider this comment in a separate rulemaking considering all covered product and covered equipment categories.

DOE also received comments from the Joint Advocates and NEEA recommending that DOE consider a ''whole box'' approach for measuring the performance of CWAFs, similar to the approach found in CSA P.8–2022, ''Thermal Efficiencies of Industrial and Commercial Gas-fired Package Furnaces.'' [11] (Joint Advocates, No. 21 at pp. 1–2, NEEA, No. 24 at pp. 1–5) More specifically, the Joint Advocates and NEEA stated that while they supported DOE's efforts to establish TE2, they encouraged DOE to evaluate the potential use of CSA P.8–2022. They asserted that CSA P.8 would more accurately represent overall efficiency of a CWAF because the new heating metric in that standard (*i.e.,* ''total heating season coefficient of performance'') calculates the efficiency of a CWAF using a more holistic approach, by incorporating factors such as burner efficiency, total enclosure heat losses, fan energy consumption, and heat gains from heat recovery. *Id.* Similarly, NYSERDA also encouraged DOE to consider any forthcoming updates that may better measure the holistic energy use of CWAFs. (NYSERDA, No. 16 at p. 2)

As discussed in section I.A of this document, EPCA requires that the test procedures for CWAFs be those generally accepted industry testing procedures or rating procedures developed or recognized by AHRI or ASHRAE, as referenced in ASHRAE Standard 90.1. (42 U.S.C. 6314(a)(4)(A)) If such an industry test procedure or rating procedure is amended, the Secretary shall amend the test procedure for the product as necessary to be consistent with the amended industry test procedure or rating procedure unless the Secretary determines, by rule, published in the **Federal Register** and supported by clear and convincing evidence, that to do so would not meet the requirements in 42 U.S.C. 6314(a)(2) and (3) related to representative use and test burden. (42 U.S.C. 6314(a)(4)(B)) In this case, the industry test standards referenced by ASHRAE Standard 90.1 are ANSI Z21.47 for gas-fired CWAFs and UL 727 for oil-fired CWAFs. The test methods adopted in this final rule incorporate by reference those industry standards, and are generally consistent with and build upon those industry standards by providing clarifications or other modifications, as necessary, to meet the requirements of EPCA. DOE has determined that the test procedures for CWAFs adopted in this final rule will produce test results which reflect energy efficiency of CWAFs during a representative average use cycle, are not unduly burdensome to conduct, as required by EPCA. Further, DOE notes that the scope of CSA P.8–2022 indicates that the standard is intended to provide ''cold climate'' performance criteria that is representative of use in colder climates found in Canada and other northern locations, which may not be representative of the U.S. as a whole.

[10] Heating value for natural gas or propane must be 970–1100 Btu/ft^3 or 2466–2542 Btu/ft^3, respectively. Specific gravity for natural gas or propane must be 0.57–0.70 or 1.522–15.74, respectively. Ultimate carbon dioxide for natural gas or propane must be 11.7–12.2% or 13.73–13.82%, respectively.

[11] CSA P.8–2022 is available for purchase at: *www.csagroup.org/store/product/CSA%20P.8:22/.* (Last accessed Jan. 31, 2023).

Therefore, DOE did not find it necessary to move to a test method that uses the approach taken by CSA P.8–2022. In response to NYSERDA, DOE will continue to monitor future applicable industry test standard updates related to CWAFs.

F. Effective and Compliance Dates

The effective date for the adopted CWAFs test procedure amendments is 30 days after the date of publication of this final rule in the **Federal Register**.

Regarding the compliance date, 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 for CWAFs, beginning 360 days after the date of publication of this final rule in the **Federal Register**. (42 U.S.C. 6314(d)(1))

To the extent the modified test procedure adopted in this final rule is required only for the evaluation under updated CWAF energy conservation standards (*i.e.,* standards denominated in terms of the new TE2 metric), compliance with the amended test procedure does not require use of such modified test procedure provisions until the compliance date of such updated standards, if adopted.

G. Test Procedure Costs

EPCA requires that the test procedures for CWAFs be those generally accepted industry testing procedures or rating procedures developed or recognized by either AHRI or ASHRAE, as referenced in ASHRAE Standard 90.1. (42 U.S.C. 6314(a)(4)(A)) Further, if such an industry test procedure is amended, DOE must amend its test procedure to be consistent with the amended industry test procedure unless DOE determines, by rule published in the **Federal Register** and supported by clear and convincing evidence, that such an amended test procedure would not meet the requirements in 42 U.S.C. 6314(a)(2)–(3) related to representative use and test burden. (42 U.S.C. 6314(a)(4)(B))

In this final rule, DOE is amending the test procedure for CWAFs for determining TE by incorporating by reference the most up-to-date versions of the industry test standards referenced in the DOE test procedure, and by providing additional detail for the test setup for models with multiple flue outlets and models with flue outlets having space limitations. DOE has determined that these amendments to the test procedure for determining TE would not be unduly burdensome for manufacturers to conduct, and that the test procedures for this equipment are consistent with the industry test procedure updates. DOE has also determined that the amendments to the test procedure for determining TE would improve the representativeness, accuracy, and reproducibility of the test results and would not be unduly burdensome to conduct. DOE expects that the test procedure in appendix A for determining TE will not increase testing costs.

DOE is also establishing a new metric for CWAFs, TE2, and a new appendix B, which includes the test procedure for determining TE2. In the February 2022 NOPR, DOE estimated that the additional test cost due to the additional part-load test and jacket loss test required for the TE2 metric would be $2,200, compared to the DOE test procedure using the TE metric, which DOE estimated to be $4,200 at a third-party laboratory (*i.e.,* a total estimated cost of $6,400 per tested unit for the amended TE2 test procedure). Therefore, assuming two units are tested per basic model,[12] DOE estimated the testing cost associated with the newly proposed appendix B test procedure to be $12,800 per basic model. 87 FR 10726, 10741–10742 (Feb. 25, 2022). DOE also noted that in accordance with 10 CFR 429.41, CWAF manufacturers may elect to use an AEDM to rate models for the TE2 metric, which significantly reduces testing costs to industry. DOE estimated the per-manufacturer cost to develop and validate an AEDM to determine TE2 for CWAF equipment to be $17,300. DOE estimated a cost of $46 per basic model for determining energy efficiency using a validated AEDM.[13] 87 FR 10726, 10742 (Feb. 25, 2022). Additionally, DOE has determined that the appendix B test procedure and TE2 calculation would alter the measured energy efficiency of a CWAF.

DOE received multiple comments on the test cost and burden associated with performing the TE2 test procedure. Rheem generally stated that measuring jacket loss is very labor-intensive due to the need to take apart the unit and presents a burden to manufacturers. (Rheem, Public Meeting Transcript, No. 15 at pp. 23–24) AHRI asserted that there are external costs associated with this proposed test procedure change that DOE has not accounted for, including bandwidth limitations at laboratory facilities that would cause manufacturers to test internally and which could delay testing of new units while existing models are retested. (AHRI, No. 17 at p. 5) AHRI also asserted that DOE did not accurately account for the cost of performing a jacket loss test at full-load and part-load because determining compliance with ASHRAE Standard 90.1 requires that only the worst-case unit in a product line needs to be tested, but TE2 would require manufacturers to run the jacket loss test twice every time a unit is tested. AHRI also stated that there are no AEDMs currently available for TE2 and developing an AEDM is extremely costly due to the number of variables that need to be accounted for and modeled accurately (*e.g.,* fan capacity, cabinet geometry, variation in size of the heater, and the inclusion of dampers, energy recovery ventilators (ERVs), and heat recovery ventilators (HRVs) in the airflow path). AHRI also disagreed with the Department's estimate that the associated rerating costs would be approximately $17,400, because manufacturers will need to validate any new AEDM by testing at least two (2) basic models, which will have associated manufacturing and test costs. Instead, AHRI estimated that the cost of the test samples alone will reach upwards of $30,000 (without accounting for the AEDM development cost or test time), and that the test time must include a minimum of several days to set up for each sample, with laboratory time being very expensive. (*Id.*) Daikin supported AHRI's comments on this topic and added that testing cost and burden will increase substantially if manufacturers must assess part-load conditions and jacket loss. Daikin noted that if ambient conditions must be controlled in psychometric rooms to conduct jacket loss testing, it could impact availability of those test rooms for other equipment such as commercial unitary air conditioners and heat pumps. (Daikin, No. 25 at p. 3) Carrier stated that DOE underestimated the cost to validate an AEDM, because CWAF sizes vary between 225,000 Btu/h and 2,000,000 Btu/h (which can lead to an extremely large variation in cost). Carrier stated that to create an accurate

[12] Per the sampling requirements specified at 10 CFR 429.11(b), manufacturers are required to test at least two units to determine the rating for a basic model, except if only one unit of the basic model is produced.

[13] DOE's estimated initial cost to develop and validate an AEDM includes (1) 80 hours to develop the AEDM based on existing simulation tools; (2) an additional 16 hours to validate the AEDM for two basic models at the cost of an engineering calibration technician wage of $46 per hour; and (3) the cost of third-party testing of two units per validation class (as required in 10 CFR 429.70(c)(2)(iv)). DOE estimated the additional per basic model cost to determine efficiency using an AEDM assuming 1 hour per basic model at the cost of an engineering calibration technician wage of $46 per hour.

AEDM, a manufacturer would need to consider a ''worst case'' model, and that this can cost upwards of $50,000. (Carrier, No. 22 at p. 5)

In response, DOE notes that the estimated cost of testing for TE2 presented in the February 2022 NOPR is based on actual price quotations from third-party laboratories. Additionally, the estimated cost to develop an AEDM reflects 80 hours to develop the AEDM based on existing simulation tools, plus an additional 16 hours to validate the AEDM at a rate of $46 per hour, plus the cost to conduct the test on two units as required by 10 CFR 429.70(c)(2)(iv). DOE recognizes that depending on each individual manufacturer's approach to testing and rating their models (whether based on actual testing, AEDMs, or a combination of approaches) and the number of models they would need to rate with TE2, test costs could vary significantly. DOE's estimates are intended to represent the typical or most likely costs given the various pathways available for rating TE2. However, DOE recognizes that the costs could be higher. Although TE2 testing will be cost more than the current TE test method due to the need to perform jacket loss testing and testing at the minimum input capacity, DOE has concluded that the additional costs are not unduly burdensome and are justified due to the improved representativeness of TE2 as compared to TE. Further, because there is no requirement to make representations with TE2 at this time, DOE does not view laboratory bandwidth limitations as a significant issue. However, if DOE were to transition to standards based on the TE2 metric in the future, which would require manufacturers to make representations of TE2, DOE notes that it would provide a lead time before compliance is required, consistent with the requirements of EPCA,[14] which should alleviate any laboratory bandwidth issues.

IV. Procedural Issues and Regulatory Review

A. Review Under Executive Orders 12866, 13563, and 14094

Executive Order (E.O.) 12866, ''Regulatory Planning and Review,'' 58 FR 51735 (Oct. 4, 1993), as supplemented and reaffirmed by E.O. 13563, ''Improving Regulation and Regulatory Review,'' 76 FR 3821 (Jan. 21, 2011) and amended by E.O. 14094, ''Modernizing Regulatory Review,'' 88 FR 21879 (April 11, 2023), 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: *www.energy.gov/gc/office-general-counsel.* DOE reviewed this final rule under the provisions of the Regulatory Flexibility Act and the procedures and policies published on February 19, 2003.

On February 25, 2022, DOE published in the **Federal Register** a notice of proposed rulemaking (February 2022 NOPR) proposing to update the references in the Federal test procedure to the most recent version of the relevant industry test procedures as they relate to CWAFs, as well as to adopt a new TE2 metric. Specifically, DOE proposed to adopt two appendices to 10 CFR 431.76—appendix A for determining TE and appendix B for determining TE2. The TE test method in appendix A is similar to the current method for TE, with several clarifications and updates to incorporate by reference the most recent versions of appliable industry test standards. The TE2 test method in appendix B builds upon the TE test method in appendix A, but also accounts for jacket losses and operation at the minimum input rating.

As part of the February 2022 NOPR, DOE conducted its initial regulatory flexibility analysis (IRFA). 87 FR 10726, 10742–10744 (Feb. 25, 2022). DOE used the Small Business Administration (SBA) small business size standards to determine whether manufacturers qualify as small businesses, which are listed by North American Industry Classification System (NAICS).[15] The 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. CWAF manufacturers are classified under NAICS code 333415, ''Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment Manufacturing.'' In 13 CFR

[14] Under 42 U.S.C. 6313(a)(6)(C)(iv), if DOE amends standards pursuant to a six-year-lookback review initiated under 42 U.S.C. 6313(a)(6)(C)(i), amended standards apply a minimum of three years after publication of the amended standards. Under 42 U.S.C. 6313(a)(6)(D)(i), if DOE amends standards pursuant to an amendment to ASHRAE Standard 90.1 levels, amended standards apply a minimum of 2 years after the effective date of the minimum energy efficiency requirement in the amended ASHRAE Standard 90.1.

[15] The size standards are listed by NAICS code and industry description and are available at: *www.sba.gov/document/support-table-size-standards* (Last accessed Feb. 8, 2022).

121.201, the SBA sets a threshold of 1,250 employees or fewer for an entity to be considered as a small business for this category.

DOE relied on publicly-available databases to identify potential small businesses that manufacture equipment covered by this rulemaking. DOE utilized the California Energy Commission's Modernized Appliance Efficiency Database System (MAEDbS) [16] and DOE's Certification Compliance Database (CCD) [17] to identify potential small businesses that manufacture CWAFs covered by this rulemaking. DOE identified eight original equipment manufacturers (OEMs) of CWAFs affected by this rulemaking. DOE screened out companies that do not meet the definition of a ''small business'' or are foreign-owned and operated. DOE identified one small, domestic OEM for consideration. DOE used subscription-based business information tools (*e.g.,* Dun & Bradstreet reports [18]) to determine headcount and revenue of the small business.

In the February 2022 NOPR, DOE determined the one small manufacturer had average annual revenues of approximately $3.3 million. Additionally, DOE identified four basic models from the small manufacturer. DOE estimated the re-rating costs for the manufacturer to be approximately $17,400 when making use of AEDMs. The cost for this small manufacturer to re-rate all basic models was estimated to be less than 1 percent of annual revenue. DOE also estimated the re-rating cost for the small manufacturer based on physical testing of all four models based on third-party laboratory testing. Relying on pricing quotes from third-party laboratories, DOE estimated costs of approximately $51,200 for the small business. The cost for this small manufacturer to re-rate all basic models with physical testing was estimated to be less than 1.6 percent of annual revenue. 87 FR 10726, 10744 (Feb. 25, 2022).

DOE did not receive any comments on the number of small entities in response to the February 2022 NOPR. As discussed in section III.G of this document, DOE received several comments that suggested that the February 2022 NOPR underestimated the cost of testing for TE2 generally. However, as discussed previously, the estimated cost of testing for TE2 presented in the February 2022 NOPR is based on actual price quotations from third-party laboratories. Additionally, the estimated cost to develop an AEDM reflects 80 hours to develop the AEDM based on existing simulation tools, plus an additional 16 hours to validate the AEDM at a rate of $46 per hour, plus the cost to conduct the test on two units as required by 10 CFR 429.70(c)(2)(iv). Although DOE recognizes that each individual manufacturer's approach to testing and rating their models (whether based on actual testing, AEDMs, or a combination of approaches) could cause test costs to vary significantly, DOE's estimates are intended to represent the typical or most likely costs given the various pathways available for rating TE2, and, therefore, DOE maintained its estimates from the February 2022 NOPR for this final rule.

On the basis of the *de minimis* compliance burden, DOE concludes and certifies that the cost effects accruing from this test procedure 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 will transmit 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 CWAFs 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 CWAFs. (*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 CWAFs in this final rule. Instead, DOE may consider proposals to amend the certification requirements and reporting for CWAFs under a separate rulemaking regarding appliance and equipment certification. DOE will address changes to OMB Control Number 1910–1400 at that time, as necessary.

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

DOE has analyzed this regulation in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.;* NEPA) and DOE's NEPA implementing regulations (10 CFR part 1021). In this final rule, DOE establishes test procedure amendments that it expects will be used to develop and implement future energy conservation standards for CWAFs. DOE has determined that this rule falls into a class of actions that are categorically excluded from review under NEPA and DOE's implementing regulations, because it is a rulemaking that interprets or amends an existing rule or regulation that does not change the environmental effect of the rule or regulation being amended. 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, subpart D, appendix A, sections 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 10, 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

[16] MAEDbS can be accessed at *cacertappliances.energy.ca.gov/Pages/ApplianceSearch.aspx* (Last accessed Feb. 8, 2022).

[17] Certified equipment in the CCD is listed by product class and can be accessed at *www.regulations.doe.gov/certification-data/#q=Product_Group_s%3A** (Last accessed July 15, 2021).

[18] The Dun & Bradstreet Hoovers subscription login is accessible online at *app.dnbhoovers.com/* (Last accessed Feb. 8, 2023).

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 has determined that it will not have a substantial direct effect on the States, on the relationship between the national 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 to amend the test procedure for measuring the energy efficiency of CWAFs 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 amendments to the Federal test procedure for CWAFs contained in this final rule adopt testing methods contained in certain sections of the following commercial standards: AHRI 1500–2015 (which in turn references ASTM D240–09, ASTM D396–14a, ASTM D4809–09a, and ASTM D5291–10), ANSI Z21.47–2021 (which in turn references ANSI/ASME PTC 19.3–1974 (R2004)), ANSI/ASHRAE 103–2022, and UL 727–2018 (which in turn references ASTM E230/E230M–17 and NFPA 97–2003). DOE has evaluated these standards and is unable to conclude whether they fully comply with the requirements of section 32(b) of the FEAA (*i.e.,* whether they were 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 final 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 following test standards:

AHRI 1500–2015 provides instruction for how to perform fuel oil analysis and for how to calculate flue loss of oil-fired CWAFs.

Copies of AHRI 1500–2015 can be obtained from the Air-Conditioning, Heating, and Refrigeration Institute (AHRI), 2311 Wilson Blvd., Suite 400, Arlington, VA 22201, (703) 524–8800, or online at: *www.ahrinet.org.*

ANSI Z21.47–2021 provides instruction for how to test gas-fired CWAFs.

ANSI/ASHRAE 103–2022 provides instruction for how to test residential furnaces and boilers, which DOE is referencing for the purpose of providing instruction for testing condensing gas-fired CWAFs.

ANSI/ASME PTC 19.3–1974 (R2004) is referenced by ANSI Z21.47–2021 and specifies thermocouple requirements for when testing gas-fired CWAFs.

Copies of ANSI Z21.47–2021, ANSI/ASHRAE 103–2022, and ANSI/ASME PTC 19.3–1974 (R2004), can be obtained the from the American National Standards Institute (ANSI), 25 W 43rd Street, 4th Floor, New York, NY 10036, (212) 642–4900, or online at: *www.webstore.ansi.org.*

ASTM D240–09 is referenced in AHRI 1500–2015, and it contains fuel oil heating value requirements.

ASTM D396–14a is referenced in AHRI 1500–2015, and it contains general fuel oil requirements.

ASTM D4809–09a is referenced in AHRI 1500–2015, and it contains fuel oil hydrogen and carbon content requirements.

ASTM D5291–10 is referenced in AHRI 1500–2015, and it contains fuel oil density requirements.

ASTM E230/E230M–17 is referenced in UL 727–2018, and it specifies thermocouple requirements for when testing oil-fired CWAFs.

Copies of ASTM D240–09, ASTM D396–14a, ASTM D4809–09a, ASTM D5291–10, and ASTM E230/E230M–17 can be obtained from ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428, (877) 909–2786 or online at: *www.astm.org.*

NFPA 97–2003 is referenced in UL 727–2018 and provides definitions for the terms ''combustible'' and ''noncombustible.''

Copies of NFPA 97–2003 can be obtained from the National Fire Protection Association (NFPA), 1 Batterymarch Park, Quincy, MA 02169–7471, 1–800–344–3555 or online at: *www.nfpa.org.*

UL 727–2018 provides instruction for how to test oil-fired CWAFs.

Copies of UL 727–2018 can be obtained from Underwriters Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, IL 60062, (847) 272–8800, or online at: *www.standardscatalog.ul.com.*

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, and Reporting and recordkeeping requirements.

Signing Authority

This document of the Department of Energy was signed on May 22, 2023, by Francisco Alejandro Moreno, Acting 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 May 23, 2023.

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. Amend § 431.72 by adding in alphabetical order a definition for ''Thermal efficiency two'' to read as follows:

§ 431.72 Definitions concerning commercial warm air furnaces.

* * * * *

Thermal efficiency two for a commercial warm air furnace equals 100

percent minus percent flue loss and jacket loss.

* * * * *

■ 3. Revise § 431.75 to read as follows:

§ 431.75 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, 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, 1000 Independence Ave. SW, EE–5B, Washington, DC 20585, (202) 586–9127, *Buildings@ee.doe.gov, www.energy.gov/eere/buildings/building-technologies-office.* For information on the availability of this material at NARA, visit: *www.archives.gov/federal-register/cfr/ibr-locations.html* or email: *fr.inspection@nara.gov.* The material may be obtained from the sources in the following paragraphs of this section.

(b) *AHRI.* Air-Conditioning, Heating, and Refrigeration Institute, 2311 Wilson Blvd., Suite 400, Arlington, VA 22201, (703) 524–8800, or online at: *www.ahrinet.org.*

(1) ANSI/AHRI 1500–2015 (''AHRI 1500–2015''), *Performance Rating of Commercial Space Heating Boilers,* ANSI-approved November 28, 2014; IBR approved for appendix A to this subpart.

(2) [Reserved]

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

(1) CSA/ANSI Z21.47:21, (''ANSI Z21.47–2021''), *Gas-fired central furnaces,* ANSI-approved April 21, 2021; IBR approved for appendices A and B to this subpart.

(2) [Reserved]

(d) *ASHRAE.* American Society of Heating, Refrigerating and Air-Conditioning Engineers Inc., 180 Technology Parkway NW, Peachtree Corners, Georgia 30092, (404) 636–8400, or online at: *www.ashrae.org.*

(1) ANSI/ASHRAE 103–2022 (''ASHRAE 103–2022''), *Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers,* approved January 10, 2022; IBR approved for appendix A to this subpart.

(2) [Reserved]

(e) *ASME.* American Society of Mechanical Engineers, Service Center, 22 Law Drive, P.O. Box 2900, Fairfield, NJ 07007, (973) 882–1170, or online at: *www.asme.org.*

(1) ANSI/ASME PTC 19.3–1974 (R2004), *Supplement to ASME Performance Test Codes: Part 3: Temperature Measurement, Instruments and Apparatus,* reaffirmed 2004; IBR approved for appendix A to this subpart.

(2) [Reserved]

(f) *ASTM.* ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428, (877) 909–2786, or online at: *www.astm.org/.*

(1) ASTM D240–09, *Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter,* approved July 1, 2009; IBR approved for appendix A to this subpart.

(2) ASTM D396–14a, *Standard Specification for Fuel Oils,* approved October 1, 2014; IBR approved for appendix A to this subpart.

(3) ASTM D4809–09a, *Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method);* approved September 1, 2009; IBR approved for appendix A to this subpart.

(4) ASTM D5291–10, *Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants,* approved May 1, 2010; IBR approved for appendix A to this subpart.

(5) ASTM E230/E230M–17 (''ASTM E230/E230M–17''), *Standard Specification for Temperature-Electromotive Force (emf) Tables for Standardized Thermocouples,* approved November 1, 2017; IBR approved for appendix A to this subpart.

(g) *NFPA.* National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169–7471, 1–800–344–3555, or online at: *www.nfpa.org.*

(1) NFPA 97 (''NFPA 97–2003''), *Standard Glossary of Terms Relating to Chimneys, Vents, and Heat-Producing Appliances;* copyright 2023; IBR approved for appendix A to this subpart.

(2) [Reserved]

(h) *UL.* Underwriters Laboratories, Inc., 333 Pfingsten Road, Northbrook, IL 60062, (847) 272–8800, or online at: *www.ul.com.*

(1) UL 727 (''UL 727–2018''), *Standard for Safety Oil-Fired Central Furnaces,* Tenth Edition, published January 31, 2018; IBR approved for appendix A to this subpart.

(2) [Reserved]

■ 4. Revise § 431.76 to read as follows:

§ 431.76 Uniform test method for the measurement of energy efficiency of commercial warm air furnaces.

(a) *Scope.* This section prescribes the test requirements used to measure the energy efficiency of commercial warm air furnaces with a rated maximum input of 225,000 Btu per hour or more.

(b) *Testing and calculations*—(1) *Thermal efficiency.* Test in accordance with appendix A to subpart D of this part when making representations of thermal efficiency.

(2) *Thermal efficiency two.* Test in accordance with appendix B to subpart D of this part when making representations of thermal efficiency two.

■ 5. Appendix A to subpart D of part 431 is added to read as follows:

Appendix A to Subpart D of Part 431—Uniform Test Method for Measurement of the Energy Efficiency of Commercial Warm Air Furnaces (Thermal Efficiency)

Note: On and after May 28, 2024, any representations made with respect to the energy use or efficiency of commercial warm air furnaces must be made in accordance with the results of testing pursuant to this section. At that time, manufacturers must use the relevant procedures specified in this appendix, which reference ANSI Z21.47–2021, ASHRAE 103–2022, UL 727–2018, or AHRI 1500–2015. On and after July 3, 2023 and prior to May 28, 2024, manufacturers must test commercial warm air furnaces in accordance with this appendix or 10 CFR 431.76 as it appeared on January 1, 2023. DOE notes that, because testing under this section is required as of May 28, 2024, manufacturers may wish to begin using this amended test procedure as soon as possible. Any representations made with respect to the energy use or efficiency of such commercial warm air furnaces must be made in accordance with whichever version is selected.

Manufacturers must use the results of testing under appendix B to this subpart to determine compliance with any standards for commercial warm air furnaces that use the thermal efficiency 2 (TE2) metric.

0. Incorporation by reference.

In § 431.75, DOE incorporated by reference the entire standard for AHRI 1500–2015, ANSI Z21.47–2021, ASHRAE 103–2022, ASME PTC 19.3–1974 (R2004), ASTM D240–09, ASTM D396–14a, ASTM D4809–09a, ASTM D5291–10, ASTM E230/E230M–17, NFPA 97–2003, and UL 727–2018. However, for standards AHRI 1500–2015, ANSI Z21.47–2021, ASHRAE 103–2022, and UL 727–2018, only the enumerated provisions of those documents apply to this appendix, as follows:

0.1 ANSI Z21.47–2021

(a) Sections 5.1, 5.1.4, 5.2, 5.3, 5.4, 5.5, 5.5.1, 5.6, and 7.2.1 as specified in section 1.1 of this appendix;

(b) Section 5.40 as specified in sections 1.1 and 3.1 of this appendix;

(c) Section 5.2.8 as specified in section 4.1 of this appendix;

(d) Annex I as specified in section 3.1 of this appendix.

0.2 ASHRAE 103–2022

(a) Sections 7.2.2.4, 7.8, and 9.2 as specified in section 2.2 of this appendix;

(b) Sections 11.3.7.1 and 11.3.7.2 as specified in section 4.1 of this appendix.

0.3 UL 727–2018

(a) Sections 2, 3, 37, 38 and 39, 40, 40.6, 41, 42, 43.2, 44, 45, and 46 as specified in section 1.2 of this appendix;

(b) Figure 40.3 as specified in section 2.1 of this appendix.

0.4 AHRI 1500–2015

(a) Section C3.2.1.1 as specified in section 1.2 of this appendix;

(b) Sections C7.2.4, C7.2.5, and C7.2.6.2 as specified in section 3.2 of this appendix.

1. Test setup and Testing. Where this section prescribes use of ANSI Z21.47–2021 or UL 727–2018, perform only the procedures pertinent to the measurement of the steady-state efficiency, as specified in this section.

1.1 *Gas-fired commercial warm air furnaces.* The test setup, including flue requirement, instrumentation, test conditions, and measurements for determining thermal efficiency are as specified in section 1.3 of this appendix, and the following sections of ANSI Z21.47–2021: 5.1 (General, including ASME PTC 19.3–1974 (R2004) as referenced in Section 5.1.4), 5.2 (Basic test arrangements), 5.3 (Test ducts and plenums), 5.4 (Test gases), 5.5 (Test pressures and burner adjustments), 5.6 (Static pressure and air flow adjustments), 5.40 (Thermal efficiency), and 7.2.1 (Basic test arrangements for direct vent central furnaces). If section 1.3 of this appendix and ANSI Z21.47–2021 have conflicting provisions (*e.g.,* the number of thermocouples that should be used when testing units with flue outlets that have a cross-sectional area of 3.14 square inches or less), follow the provisions in section 1.3 of this appendix. The thermal efficiency test must be conducted only at the normal inlet test pressure, as specified in section 5.5.1 of ANSI Z21.47–2021, and at the maximum hourly Btu input rating specified by the manufacturer for the product being tested.

1.2 *Oil-fired commercial warm air furnaces.* The test setup, including flue requirement, instrumentation, test conditions, and measurement for measuring thermal efficiency is as specified in section 1.3 of this appendix and the following sections of UL 727–2018: 2 (Units of Measurement), 3 (Glossary, except that the definitions for ''combustible'' and ''non-combustible'' in sections 3.11 and 3.27 shall be as referenced in NFPA 97–2003), 37 (General), 38 and 39 (Test Installation), 40 (Instrumentation, except 40.4 and 40.6.2 through 40.6.7 which are not required for the thermal efficiency test, and including ASTM E230/E230M–17 as referenced in Sections 40.6), 41 (Initial Test Conditions), 42 (Combustion Test—Burner and Furnace), 43.2 (Operation Tests), 44 (Limit Control Cutout Test), 45 (Continuity of Operation Test), and 46 (Air Flow, Downflow or Horizontal Furnace Test). If section 1.3 of this appendix and UL 727–2018 have conflicting provisions (*e.g.,* the number of thermocouples that should be used when testing units with flue outlets that have a cross-sectional area of 3.14 inches or less), follow the provisions in section 1.3 of this appendix. Conduct a fuel oil analysis for heating value, hydrogen content, carbon content, pounds per gallon, and American Petroleum Institute (API) gravity as specified in section C3.2.1.1 of AHRI 1500–2015, including the applicable provisions of ASTM D240–09, ASTM D4809–09a, ASTM D5291–10, and ASTM D396–14a, as referenced. The steady-state combustion conditions, specified in section 42.1 of UL 727–2018, are attained when variations of not more than 5 °F in the measured flue gas temperature occur for three consecutive readings taken 15 minutes apart.

1.3 *Additional test setup requirements for gas-fired and oil-fired commercial warm air furnaces*

1.3.1 *Thermocouple setup for gas-fired and oil-fired commercial warm air furnaces with flue outlets that have a cross-sectional area of 3.14 square inches or less.* For units with flue outlets having a cross-sectional area of 3.14 square inches or less, the flue gas temperatures may optionally be measured using five individual thermocouples, instead of nine thermocouples.

1.3.2 *Procedure for flue gas measurements when testing units with multiple flue outlets.* For units that have multiple flue outlets, record flue gas measurements (*e.g.,* flue gas temperature, CO_2 in the flue gasses) separately for each individual flue outlet and calculate a weighted-average value based on the readings of all flue outlets. To determine the weighted average for each measurement, first determine the input rating of the furnace module associated with each flue outlet. Then multiply the ratio of the input rating for the furnace module associated with each individual flue outlet to the total nameplate input rating of the furnace (*i.e.,* the input rating associated with each individual flue outlet divided by the total nameplate input rating) by that flue outlet's respective component measurement and the sum of all of the products of the calculations for all of the flue outlets to determine the weighted-average values. Use the weighted-average values to determine flue loss, and whether equilibrium conditions are met before the official test period.

2. Additional test measurements

2.1 *Determination of flue CO_2 (carbon dioxide) or O_2 (oxygen) for oil-fired commercial warm air furnaces.* In addition to the flue temperature measurement specified in section 40.6.8 of UL 727–2018, locate one or two sampling tubes within six inches downstream from the flue temperature probe (as indicated on Figure 40.3 of UL 727–2018). If an open end tube is used, it must project into the flue one-third of the chimney connector diameter. If other methods of sampling the flue gas are used, place the sampling tube so as to obtain an average sample. There must be no air leak between the temperature probe and the sampling tube location. Collect the flue gas sample at the same time the flue gas temperature is recorded. The CO_2 or O_2 concentration of the flue gas must be as specified by the manufacturer for the product being tested, with a tolerance of ±0.1 percent. Determine the flue CO_2 or O_2 using an instrument with a reading error no greater than ±0.1 percent.

2.2 *Procedure for the measurement of condensate for a gas-fired condensing commercial warm air furnace.* The test procedure for the measurement of the condensate from the flue gas under steady-state operation must be conducted as specified in sections 7.2.2.4, 7.8, and 9.2 of ASHRAE 103–2022 under the maximum rated input conditions. This condensate measurement must be conducted for an additional 30 minutes of steady-state operation after completion of the steady-state thermal efficiency test specified in section 1.1 of this appendix.

3. Calculation of thermal efficiency

3.1 *Gas-fired commercial warm air furnaces.* Use the calculation procedure specified in Section 5.40, Thermal efficiency, of ANSI Z21.47–2021. When determining the flue loss that is used in the calculation of thermal efficiency, the calculation method specified in Annex I of ANSI Z21.47–2021 shall be used.

3.2 *Oil-fired commercial warm air furnaces.* Calculate the percent flue loss (in percent of heat input rate) by following the procedure specified in sections C7.2.4, C7.2.5, and C7.2.6.2 of the AHRI 1500–2015. The thermal efficiency must be calculated as: Thermal Efficiency (percent) = 100 percent − flue loss (in percent).

4. Procedure for the calculation of the additional heat gain and heat loss, and adjustment to the thermal efficiency, for a condensing commercial warm air furnace.

4.1 Calculate the latent heat gain from the condensation of the water vapor in the flue gas, and calculate heat loss due to the flue condensate down the drain, as specified in sections 11.3.7.1 and 11.3.7.2 of ASHRAE 103–2022, with the exception that in the equation for the heat loss due to hot condensate flowing down the drain in section 11.3.7.2, the assumed indoor temperature of 70 °F and the temperature term T_{OA} must be replaced by the measured room temperature as specified in section 5.2.8 of ANSI Z21.47.

4.2 *Adjustment to the thermal efficiency for condensing commercial warm air furnaces.* Adjust the thermal efficiency as calculated in section 3.1 of this appendix by adding the latent gain, expressed in percent, from the condensation of the water vapor in the flue gas, and subtracting the heat loss (due to the flue condensate down the drain), also expressed in percent, both as calculated in section 4.1 of this appendix, to obtain the thermal efficiency of a condensing furnace.

■ 6. Appendix B to subpart D of part 431 is added to read as follows:

Appendix B to Subpart D of Part 431–Uniform Test Method for Measurement of the Energy Efficiency of Commercial Warm Air Furnaces (Thermal Efficiency Two)

Note: Manufacturers must use the results of testing under this appendix B to determine compliance with any standards for commercial warm air furnaces that use the thermal efficiency 2 (TE2) metric. In addition, manufacturers may optionally make representations of energy use or efficiency of this equipment using TE2 as determined using this appendix starting on July 3, 2023.

0. Incorporation by Reference.

In § 431.75, DOE incorporates by reference the entire standard ANSI Z21.47–2021. However, only section 5.40 and Appendix J of ANSI Z21.47–2021 apply, as specified in sections 1.2 and 1.6 of this appendix.

1. Testing

1.1 Set up and test the unit according to sections 0 through 4 of appendix A to this subpart, while operating the unit at the maximum nameplate input rate (*i.e.,* full load). Calculate thermal efficiency (TE) using the procedure specified in sections 3 and 4 of appendix A to this subpart.

1.2 For commercial warm air furnaces that are designed for outdoor installation (including but not limited to CWAFs that are weatherized, or approved for resistance to wind, rain, or snow), or indoor installation within an unheated space (*i.e.,* isolated combustion systems), determine the jacket loss using Section 5.40 and Annex J of ANSI Z21.47–2021 while the unit is operating at the maximum nameplate input. The jacket shall consist of the surfaces surrounding the heating section of the furnace. The jacket includes all surfaces separating the heating section from the supply air, outside air, or condenser section, including the bottom surface separating the heating section from the basepan.

1.3 For commercial warm air furnaces that are designed only for indoor installation within a heated space, jacket loss shall be zero. For commercial warm air furnaces that are designed for indoor installation within a heated or unheated space, multiply the jacket loss determined in section 1.2 of this appendix by 1.7. For all other commercial warm air furnaces, including commercial warm air furnaces that are designed for outdoor installation (including but not limited to CWAFs that are weatherized, or approved for resistance to wind, rain, or snow), multiply the jacket loss determined in section 1.2 of this appendix by 3.3.

1.4 Subtract the jacket loss determined in section 1.3 of this appendix from the TE determined in section 1.1 of this appendix to determine the full-load efficiency.

1.5 Set up and test the unit according to sections 0 through 4 of appendix A to this subpart, while operating the unit at the nameplate minimum input rate (*i.e.,* part load). Calculate TE using the procedure specified in sections 3 and 4 of appendix A to this subpart.

1.6 For commercial warm air furnaces that are designed for outdoor installation (including but not limited to CWAFs that are weatherized, or approved for resistance to wind, rain, or snow), or indoor installation within an unheated space (*i.e.,* isolated combustion systems), determine the jacket loss using Section 5.40 and Annex J of ANSI Z21.47–2021 while the unit is operating at the minimum nameplate input. Alternatively, the jacket loss determined in section 1.2 of this appendix at the maximum nameplate input may be used.

1.7 For commercial warm air furnaces that are designed only for indoor installation within a heated space, jacket loss shall be zero. For commercial warm air furnaces that are designed for indoor installation within a heated or unheated space, multiply the jacket loss determined in section 1.6 of this appendix by 1.7. For all other commercial warm air furnaces, including commercial warm air furnaces that are designed for outdoor installation (including but not limited to CWAFs that are weatherized, or approved for resistance to wind, rain, or snow), multiply the jacket loss determined in section 1.6 of this appendix by 3.3.

1.8 Subtract the jacket loss determined in section 1.7 of this appendix from the TE determined in section 1.5 of this appendix to determine the part-load efficiency.

1.9 Calculate TE2 by taking the average of the full-load and part-load efficiencies as determined in sections 1.4 and 1.8 of this appendix, respectively.

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2023–0434; Product Identifier 91–NM–255–AD; Amendment 39–22450; AD 92–02–14 R1]

RIN 2120–AA64

Airworthiness Directives; Airbus SAS Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; removal.

SUMMARY: The FAA is removing Airworthiness Directive (AD) 92–02–14, which applied to certain Airbus SAS Model A320 series airplanes. AD 92–02–14 required inspection for correct installation of the flexible control cables on the overwing emergency escape slides. The FAA issued AD 92–02–14 to prevent failure of the overwing emergency escape slides to deploy, which would compromise use of the exit during an emergency. Since the FAA issued AD 92–02–14, no new occurrences of incorrect cable installations have been reported, and existing maintenance activities are adequate to prevent new occurrences. Therefore, the FAA has determined that AD 92–02–14 is no longer necessary. Accordingly, AD 92–02–14 is removed.

DATES: This AD becomes effective June 2, 2023.

ADDRESSES:

AD Docket: You may examine the AD docket at *regulations.gov* under Docket No. FAA–2023–0434; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Dan Rodina, Aerospace Engineer, International Validation Branch, FAA, 2200 South 216th St., Des Moines, WA 98198; phone 206–231–3225; email *Dan.Rodina@faa.gov.*

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by removing AD 92–02–14, Amendment 39–8150 (57 FR 5375, February 14, 1992) (AD 92–02–14). AD 92–02–14 applied to certain Airbus SAS Model A320 series airplanes. The NPRM was published in the **Federal Register** on March 24, 2023 (88 FR 17751). The NPRM was prompted by the determination that AD 92–02–14 is no longer necessary. AD 92–02–14 required inspection for correct installation of the flexible control cables on the overwing emergency escape slides. The FAA issued AD 92–02–14 to prevent failure of the overwing emergency escape slides to deploy, which would compromise use of the exit during an emergency. Since the FAA issued AD 92–02–14, no new occurrences of incorrect cable installations have been reported, and existing maintenance activities are adequate to prevent new occurrences. The NPRM proposed to remove AD 92–02–14. The FAA is issuing this AD to remove AD 92–02–14.

Discussion of Final Airworthiness Directive

Comments

The FAA received a comment from The Air Line Pilots Association, International (ALPA), in support of the NPRM without change.