



[6450-01-P

DEPARTMENT OF ENERGY

10 CFR Part 430

[Docket Number EERE-2012-BT-TP-0024]

RIN: 1904-AC79

Energy Conservation Program for Consumer Products: Test Procedure for Residential Furnaces and Boilers

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

ACTION: Request for information (RFI).

SUMMARY: The U.S. Department of Energy (DOE) is initiating a rulemaking and data collection process to consider amendments to DOE's test procedure for residential furnaces and boilers. Because DOE has recently completed a test procedure rulemaking for the standby mode and off mode energy consumption of these products, the primary focus of this rulemaking will be on active mode operation. This rulemaking is intended to fulfill DOE's statutory obligation to review its test procedures for covered products at least once every seven years. To inform interested parties and to facilitate the process, DOE has gathered data and has identified several issues that might warrant modifications to the currently applicable test procedures, including topics on which DOE is particularly interested in receiving comment. In overview, the issues outlined in this document mainly concern reducing the test burden, test conditions impacting the

annual fuel utilization efficiency (AFUE) metric, test conditions impacting non-AFUE efficiency parameters, the performance test for automatic means in boilers, harmonization of standards, alternative methods for furnace/boiler efficiency determination, and scope. These topics (and others which commenters identify) are ones which DOE anticipates may lead to proposed test procedure amendments in a subsequent notice of proposed rulemaking (NPR). DOE welcomes written comments from the public on any subject related to the test procedures for residential furnaces and boilers, including topics not specifically raised in this RFI.

DATES: Written comments and information are requested on or before **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at <http://www.regulations.gov>. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE-2011-BT-TP-0024 and/or RIN 1904-AC79, by any of the following methods:

- **E-mail:** Res-Furnaces-Boilers-2012-TP-0024@ee.doe.gov. Include EERE-2012-BT-TP-0024 and/or RIN 1904-AC79 in the subject line of the message. Submit electronic comments in WordPerfect, Microsoft Word, PDF, or ASCII file format, and avoid the use of special characters or any form of encryption.
- **Postal Mail:** Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, Mailstop EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-2945. If possible, please submit all items on a compact disc (CD), in which case it is not necessary to include printed copies.

- Hand Delivery/Courier: Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, 6th Floor, 950 L'Enfant Plaza, SW., Washington, DC 20024. Telephone: (202) 586–2945. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

Instructions: All submissions received must include the agency name and docket number or RIN for this rulemaking. No telefacsimilies (faxes) will be accepted. For detailed instructions on submitting comments and additional information on the rulemaking process, see section III of this document (Public Participation).

Docket: For access to the docket to read background documents or comments received, go to the Federal eRulemaking Portal at <http://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT: Requests for additional information may be sent to Mr. Mohammed Khan, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, EE–2J, 1000 Independence Avenue, SW., Washington, DC 20585–0121. Telephone: (202) 586–7892. E-mail: residential_furnaces_and_boilers@ee.doe.gov.

Mr. Eric Stas, U.S. Department of Energy, Office of the General Counsel, GC-71, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-9507. Email: Eric.Stas@hq.doe.gov.

For information on how to submit or review public comments, contact Ms. Brenda Edwards, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy,

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I. Authority and Background

Title III, Part B,¹ of the Energy Policy and Conservation Act of 1975 (“EPCA” or “the Act”), Public Law 94-163 (42 U.S.C. 6291-6309, as codified) sets forth a variety of provisions designed to improve energy efficiency and establishes the Energy Conservation Program for Consumer Products Other Than Automobiles,² including residential furnaces and boilers. (42 U.S.C. 6291(1)–(2) and 6292(a)(5))

¹ This part was originally titled Part B. It was redesignated Part A in the United States Code for editorial reasons.

² All references to EPCA in this document refer to the statute as amended through the Energy Independence and Security Act of 2007, Public Law 110–140 (Dec. 19, 2007).

Under the Act, this program consists essentially of four parts: (1) testing; (2) labeling; (3) establishing Federal energy conservation standards; and (4) certification and enforcement procedures. The testing requirements consist of test procedures that manufacturers of covered products must use as both the basis for certifying to DOE that their products comply with applicable energy conservation standards adopted pursuant to EPCA, and for making representations about the efficiency of those products. (42 U.S.C. 6293(c); 42 U.S.C. 6295(s)) Similarly, DOE must use these test procedures to determine whether the products comply with any relevant standards adopted under EPCA. (42 U.S.C. 6295(s))

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

In addition, if DOE determines that a test procedure amendment is warranted, it must publish proposed test procedures and offer the public an opportunity to present oral and written comments on them. (42 U.S.C. 6293(b)(2)) Finally, in any rulemaking to amend a test procedure, DOE must determine the extent to which the proposed test procedure would alter the product's measured energy efficiency. (42 U.S.C. 6293(e)(1)) If DOE determines that the amended test procedure would alter the measured efficiency of a covered product, DOE must amend the applicable energy conservation standard accordingly. (42 U.S.C. 6293(e)(2))

Further, the Energy Independence and Security Act of 2007 (EISA 2007) amended EPCA to require that at least once every 7 years, DOE must review test procedures for all covered products and either amend the test procedures (if the Secretary determines that amended test procedures would more accurately or fully comply with the requirements of 42 U.S.C. 6293(b)(3)) or publish notice in the Federal Register of any determination not to amend a test procedure. (42 U.S.C. 6293(b)(1)(A)) Under this requirement, DOE must review the test procedures for the various types of residential furnace and boiler products not later than December 19, 2014 (i.e., 7 years after the enactment of EISA 2007). Thus, the final rule resulting from this rulemaking will satisfy the requirement to review the test procedures for furnaces and boilers within seven years of the enactment of EPCA.

DOE's test procedure for residential furnaces and boilers is found at 10 CFR 430.23(n) and 10 CFR part 430, subpart B, appendix N, Uniform Test Method for Measuring the Energy Consumption of Furnaces and Boilers. DOE established its test procedures for furnaces and boilers in a final rule published in the Federal Register on May 12, 1997. 62 FR 26140. This procedure establishes a means for determining annual energy efficiency (AFUE) and annual energy consumption of gas-fired, oil-fired, and electric furnaces and boilers.

In addition to the test procedure review provision discussed above, EISA 2007 also amended EPCA to require DOE to amend its test procedures for all covered products to include measurement of standby mode and off mode energy consumption. (42 U.S.C. 6295(gg)(2)(A)) Consequently, DOE amended its test procedures for residential furnaces and boilers to include

provisions for measuring the standby mode and off mode energy consumption of those products. DOE published a final rule in the Federal Register on October 20, 2010, which updated the DOE test procedures for residential furnaces and boilers to address the standby mode and off mode test procedure requirements under EPCA. 75 FR 64621. Since that time, DOE published a notice of proposed rulemaking (NOPR) in the Federal Register on September 13, 2011, which calls for the use of the second edition of International Electrotechnical Commission (IEC) Standard 62301, ``Household Electrical Appliances--Measurement of standby power," in lieu of the first edition incorporated by reference in the earlier final rule, as well as providing guidance on rounding and sampling. 76 FR 56339. On December 31, 2012, DOE published in the Federal Register its second test procedure final rule for furnaces and boilers related to standby mode and off mode, which incorporated by reference IEC Standards 62301 (Second Edition) and provided related rounding and sampling guidance. However, that rulemaking was limited to test procedure updates to address the above-referenced standby mode and off mode requirements, and consequently, it has not considered several other potential non-standby mode/off mode issues in DOE's existing test procedures for residential furnaces and boilers which DOE plans to address in this rulemaking. The potential issues that DOE has preliminarily identified and plans to address in this rulemaking are discussed in detail below in section II of this RFI.

In support of its test procedure rulemaking, DOE conducts in-depth technical analyses of publicly-available test standards and other relevant information. DOE continually seeks data and public input to improve its testing methodologies to more accurately reflect consumer use and to produce repeatable results. In general, DOE is requesting comment and supporting data regarding representative and repeatable methods for measuring the energy use of residential

furnaces and boilers. Additionally, DOE seeks comment and information on the specific topics below.

II. Discussion

A. Reducing Test Burden

DOE plans to identify available opportunities to potentially reduce testing burden by simplifying appropriate parts of the residential furnaces and boilers test procedure. Knowledge of a unit's physical characteristics may make it possible to reliably predict certain performance parameters without conducting testing. If so, replacing certain burdensome tests with default factors could significantly reduce the testing burden (time to conduct a test or cost of testing) without sacrificing the validity of the test results. Of course, manufacturers would retain the option to conduct actual testing, rather than rely on default values.

DOE plans to also reassess existing default factors in the test procedure, many of which were created years ago and might no longer be relevant for some of today's product designs. For example, the existing off-cycle draft factor for flue gas flow (D_F) default value of 0.4 for induced draft products was established for clamshell heat exchangers intended for use in gravity vented units. Today's products are designed with more restrictive heat exchangers (tubes and small formed sections) and are likely to result in draft factors less than 0.4. Regarding default factors, DOE requests input and comments on:

- (1) Defining default draft factors³ for each product with different physical characteristics;

³ Identified default draft factors in DOE's residential furnaces and boilers test procedure include the off-cycle draft factor for flue gas flow (D_F), the off-cycle draft factor for stack gas flow (D_S), the off-cycle draft factor for stack gas

- (2) Defining default jacket loss⁴ factors for each product type;
- (3) The appropriateness of replacing the “heat up” and “cool down” tests with default seasonal factors to account for the year-round performance of the equipment. If so, should these factors be based on physical characteristics of the equipment being evaluated, and should the use of default factors be optional or mandatory? Also, DOE is requesting data about the effect of the heat up and cool down test result measurements on AFUE calculation, the range and repeatability of the test results, and the degree to which such results are correlated with physical attributes of the tested product.
- (4) Simplifying the calculation procedure for determining the burner cycling and draft losses used to compute seasonal efficiency without losing important insight about a product’s relative energy performance; and
- (5) Other default values that need updating or parameters currently measured that could be replaced with default values.

B. Test Conditions Impacting Energy Efficiency (AFUE) Performance

DOE is interested in receiving comments about improving the test procedure’s effectiveness in quantifying energy efficiency performance under typical field conditions. DOE has identified opportunities to reduce variability, eliminate ambiguity, and address discrepancies between the test procedure and actual field conditions. On this topic, DOE seeks input on the following issues:

flow without a stack damper (D_S^O), and the power burner draft factor (D_P). D_F is the ratio of gas mass flow rate through the flue during the off-cycle to the gas mass flow rate through the flue during the on-cycle at identical temperatures. D_P is the ratio of the rate of flue gas mass flow through the furnace during the off-period to the rate of flue gas mass flow through the furnace during the on-period.

⁴ Identified default jacket loss factors in DOE’s residential furnaces and boilers test procedure include jacket loss factor (C_J) and jacket loss (L_J), which measure the losses resulting from heat escaping the furnace or boiler jacket.

- (1) The DOE test procedure incorporates by reference the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 103-1993.⁵ In 2007, ASHRAE published a revised version of Standard 103 (ASHRAE Standard 103-2007), which was updated to reflect improvements and changes in equipment design that were not adequately covered by the previous version of the standard. In particular, attention was given to the modern classes of two-stage and modulating equipment that have come on the market, as well as equipment whose performance is affected by post purge of the combustion chamber. Greater understanding and clarity regarding energy losses were also incorporated into the updated ASHRAE standard. Finally, changes in nomenclature and definitions were included to clarify meaning within the standard, a need reflected by questions and issues posed to ASHRAE committee members over the past 10 years. Furthermore, editorially, the errata from the previous version were incorporated into this version. DOE plans on updating its references to the current ASHRAE Standard 103-2007⁶ and seeks comments on which sections of ASHRAE 103-2007 should be included in the DOE test procedure.
- (2) DOE plans to review the tolerance ranges for measuring important variables such as fuel calorific value, weight of condensate, water flow and temperature, voltage, and flue gas composition. DOE seeks comment as to whether the existing tolerance

⁵ American Society of Heating Refrigerating and Air-Conditioning Engineers Inc., *ASHRAE Standard: Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers* (1993) Report No. ANSI/ASHRAE 103-1993.

⁶ American Society of Heating Refrigerating and Air-Conditioning Engineers Inc., *ASHRAE Standard: Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers* (2007) Report No. ANSI/ASHRAE 103-2007.

ranges for measuring variables in the test procedure are acceptable or whether DOE should define different methods of measuring and recording such variables.

- (3) DOE plans to review the statistical variability encountered during testing in important variables such as firing rate, heating media temperatures and flow rates, and ambient air temperature. For example, the firing rate is generally to be set and held to within $\pm 2\%$ of the nameplate rating. DOE seeks comment regarding whether this range should be narrowed.
- (4) Room ambient air temperatures are currently allowed to vary widely. Under the DOE test procedure, the room temperature is allowed to be between 65°F and 100°F, except for condensing furnaces and boilers, where the room temperature shall not exceed 85°F. DOE plans to review whether it is appropriate to tighten the allowable room air temperature range. DOE seeks comment as to whether it should tighten the allowable room air temperature range.
- (5) Currently, a minimum draft factor of 0.05 can be applied to products with restricted flueways without providing a list of qualifications or instructions as to how to verify that the units are designed with no measurable airflow through the combustion chamber and heat exchanger during the burner off-period. DOE seeks comment as to whether and under what conditions, a minimum draft factor should be used for products with restricted flueways and how the conditions could be verified if questions arose.
- (6) DOE requires all non-weatherized boilers to be rated as indoor equipment (see 10 CFR part 430, subpart B, appendix N, section 10.1). This implies that direct vent boilers that would normally meet the definition of System 9 or System 10 should

instead be defined as one of the other System numbers.⁷ DOE plans to review whether it is appropriate for direct vent boilers to be calculated according to System 3 or alternatively according to System 9 or 10, but with jacket losses excluded (*i.e.*, $L_J=0$). DOE seeks input regarding how direct vent boilers should be tested.

- (7) DOE plans to review the current value of the oversize factor⁸ (0.7) to investigate whether current field installations can be better approximated, for both furnaces and boilers. DOE seeks comment regarding an appropriate value for the oversize factor.
- (8) Currently, the DOE test procedure provides that water supply temperature must be between 120°F and 124°F for non-condensing hot water boilers and 120°F ($\pm 2^\circ\text{F}$) for condensing hot water boilers. DOE plans to review the value for the water supply temperature for non-condensing and condensing boilers. DOE seeks comment on the appropriate water supply temperature for measuring the performance of non-condensing and condensing boilers. Should DOE change the water temperatures for condensing boilers to reflect the lower temperatures encountered in low-temperature radiant installations?
- (9) The current DOE test procedure does not specify that the tested equipment is set up according to recommended field settings as defined in the product's installation and operation manual. This potentially allows the unit to be tested under conditions that are different from the field or may not be recommended for safety reasons.

⁷ System numbers are used in the ASHRAE 103 test procedure to categorize the different types of furnaces and boilers to be tested. “System 9” or “System10” refer to furnaces or boilers that are outdoor, direct vent, or isolated combustion systems. “System 3” refers to furnaces or boilers that can use indoor combustion air and have direct exhaust.

⁸ “Oversize factor” accounts for the national average oversizing of equipment that occurs when a heating equipment is sized to satisfy more than the heating load of the household. This is typically done to size the equipment so that it is able to satisfy the days in which the house heating requirements might be exceeded and/or to take into account uncertainties regarding house heating load. For example, a 0.7 oversize factor is equivalent to 30-percent oversizing of the heating equipment (in other words, 30 percent greater input capacity than is required).

Examples of such test conditions include a different flue CO₂ percentage or reduced input rate from the recommended field settings. DOE plans to review the use of manufacturer-recommended values in testing, such as the minimum firing rate for testing a unit equipped with manually-adjustable controls (see ASHRAE 103-2007, section 8.4.1.1.2) and target flue gas CO₂ levels. Should DOE change the test procedure to specify that the tested equipment is set up according to recommended field settings as defined in the product's installation and operation manual?

- (10) AFUE ratings are typically reported in manufacturer product literature and on directories of certified products to the nearest 0.1, but this is neither specified in the DOE test procedure nor explicitly required by the Federal Trade Commission (FTC). Instead, DOE's test procedure specifies that the AFUE rating should be rounded to the nearest whole percentage point (see 10 CFR 430.23(n)(2)). DOE plans to specify the requisite number of significant digits as part of this test procedure rulemaking. DOE solicits input on how much precision is statistically possible.
- (11) Vent stack requirements differ between ANSI Z21.13⁹ or ANSI Z21.47¹⁰ and the DOE test procedure. DOE plans to review the difference in efficiency rating attributable to the differences in vent stack configuration between the DOE test procedure and ANSI Z21.13 or ANSI Z21.47. DOE seeks comment on whether it should consider adopting the same vent stack requirements as set forth in ANSI Z21.13 or ANSI Z21.47.

⁹ American National Standards Institute, *American National Standard/CSA Standard for Gas-Fired Low Pressure Steam and Hot Water Boilers* (2010) Report No. ANSI Z21.13-2010, CSA 4.9-2010.

¹⁰ American National Standards Institute, *American National Standard/CSA Standard for Gas-Fired Central Furnaces* (2006) Report No. ANSI Z21.47-2006, CSA 2.3-2006.

C. Test Conditions Impacting Non-AFUE Efficiency Parameters

DOE plans to improve the ability of the test procedure to measure non-AFUE energy efficiency parameters under typical field conditions. Regarding this topic, DOE seeks input on:

- (1) The boiler test procedure measures only the power supplied to the power burner motor, the ignition device, and the circulating pump (see 10 CFR part 430, subpart B, appendix N, section 10.2.1). Some boilers are equipped with an internal pump used to maintain a minimum flow rate through the heat exchanger that does not function as a system circulating pump. DOE seeks comment on whether the boiler average annual auxiliary electrical energy consumption (E_{AE}) calculations should include one system circulating pump and an additional pump (if present) that circulates water during the operation of the burner.
- (2) Modulating power burners are often equipped with variable speed motors. The efficiency of the motor/blower combination changes with the firing rate. The same may be true for circulating pumps. Currently, DOE's test procedure assumes a fixed motor efficiency. For equipment with modulating power burners, using a fixed motor efficiency would produce inaccurate electricity consumption estimates, since the motor efficiency varies at the different firing rates. DOE plans to incorporate a method for part-load efficiency into its electricity consumption calculations for modulating equipment. DOE requests input regarding the appropriateness of incorporating a method for part-load efficiency into its electricity consumption calculations and input on what method DOE should use.

- (3) The current DOE test procedure includes power consumed by the ignition device, circulating pump, and power burner motors, but it ignores other devices that use power during the active mode (e.g., gas valve and safety and operating controls). DOE plans to consider including any electrical power consumption not already measured during the active mode. DOE seeks comment regarding how to address any electrical power consumption not already measured during the active mode.
- (4) Historical energy use data show that national average house heating loads have been changing because of increased household square footage, improved building shell efficiency, changes in the distribution of where this equipment is installed, and changes in average weather conditions. DOE plans to review the parameters to calculate the burner operating hours in section 10.2.1 of the DOE test procedure (i.e., national average heating load hours and the adjustment factor). DOE seeks comment regarding what national average values should be used to calculate burner operating hours.

D. Performance Test for Automatic Means in Boilers

In 2008, DOE published a technical amendment to the 2007 furnace and boiler final rule (72 FR 65136 (Nov. 19, 2007)) to add a number of design requirements set forth in EISA 2007. 73 FR 43611 (July 28, 2008). These requirements prohibit constant-burning pilot lights for gas-fired hot water boilers and gas-fired steam boilers, and require an automatic means for adjusting the water temperature for gas-fired hot water boilers, oil-fired hot water boilers, and electric hot water boilers. The automatic means for adjusting water temperature must automatically adjust the temperature of the water supplied by the boiler to ensure that an incremental change in

inferred heat load produces a corresponding incremental change in the temperature of water supplied.

While these requirements do not impact the AFUE rating, DOE is considering including in this test procedure a performance test to demonstrate that the “automatic means” functions as required. While this test would not need to be performed by manufacturers to certify compliance with the existing design standards, DOE would use this test to verify compliance with the design standards should a question of compliance arise. DOE invites input on:

- (1) Any principles or tests currently used, or being considered for use, to qualify the operation of the automatic means.
- (2) Required inputs and types of technologies needed to project changes in demand and the relationships between these inputs/technologies and supply temperature or pump/burner operation.
- (3) Suggestions about the measurements that should be included in the test.

E. Harmonization of Standards

DOE invites input on other national or international test procedures commonly used to rate residential furnace and boiler energy efficiency, including the advantages and disadvantages of those test procedures compared to the current DOE test procedure. In particular, DOE seeks input on:

- (1) Differences in efficiency performance caused by differences in minimum static pressure requirements in ASHRAE 103-2007¹¹ (Table IV) compared to DOE's proposed furnace fan test procedure,¹² and drawbacks or advantages associated with harmonizing the requirements.
- (2) Any other national or international test procedures that could be considered for this cycle of test procedure amendments.

F. Alternative Methods for Furnace/Boiler Efficiency Determination

DOE is aware of alternative methods to measure the heating efficiency (AFUE) of residential furnaces and boilers. In particular, DOE seeks input on:

- (1) Procedure developed by Brookhaven National Laboratory that uses linear input/output, a relationship between fuel input and heat output that can be used to determine the efficiency of residential boilers.¹³
- (2) Any other methods that could be considered for this test procedure update.

G. Scope

A combination space-heating and water-heating appliance is defined in the applicable industry test standard as a unit that is designed to provide space heating and water heating from a single primary energy source.¹⁴ The two major types of combination appliances are: (1)

¹¹ American Society of Heating Refrigerating and Air-Conditioning Engineers Inc., *ASHRAE Standard: Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers* (2007) Report No. ANSI/ASHRAE 103-2007.

¹² See 77 FR 28674 (May 15, 2012).

¹³ Butcher, Thomas, *Technical Note: Performance of Combination Hydronic Systems*, ASHRAE Journal (December 2011).

¹⁴ American Society of Heating Refrigerating and Air Conditioning Engineers, ANSI/ASHRAE 124-2007: *Methods of Testing for Rating Combination Space-Heating and Water-Heating Appliances* (2007).

boiler/tankless coil or boiler/indirect tank combination units, whose primary function is space heating, and (2) water heater/fan-coil combination units, whose primary function is domestic water heating. Currently, there is no DOE test procedure for determining the combined efficiency of the combination products that can be used to supply domestic hot water in addition to its space-heating function. However, there are DOE test procedures for the individual components (boiler or water heater) of a combined appliance which provides for testing and efficiency ratings for the primary function - space heating or domestic water heating.

DOE's test procedure for residential furnace and boilers, which is set forth at 10 CFR 430.23(n) and 10 CFR part 430, subpart B, appendix N, addresses central gas-fired, electric, and oil-fired furnaces with inputs less than 225,000 Btu/h and gas-fired, electric, and oil-fired boilers with inputs less than 300,000 Btu/h. DOE's test procedure for residential water heaters, which is set forth at 10 CFR 430.23(e) and 10 CFR part 430, subpart B, appendix E, addresses gas-fired, electric, and oil-fired storage-type water heaters with storage greater than 20 gallons and gas-fired and electric instantaneous-type water heaters with storage volume less than 2 gallons. ASHRAE has an existing test procedure, ANSI/ASHRAE 124-2007 (Methods of Testing for Rating Combination Space-Heating and Water-Heating Appliances), which provides a method of test to rate the performance of a combination space-heating and water-heating appliance.¹⁵ For this rulemaking, DOE is considering an expansion of the scope of the test procedure to include definitions and test methods for these types of combination products. DOE seeks comment on:

- (1) What types of combination equipment are there in this market?

¹⁵ American Society of Heating Refrigerating and Air Conditioning Engineers, ANSI/ASHRAE 124-2007: *Methods of Testing for Rating Combination Space-Heating and Water-Heating Appliances* (2007).

- (2) How should DOE address the measurement of energy use by such combined products (keeping in mind the potential for active mode, standby mode, and off mode operation)?

H. Standby Mode and Off Mode

On December 31, 2012, DOE published a test procedure final rule in the Federal Register for furnaces and boilers related to standby mode and off mode energy consumption. However, given the broad scope of this 7-year-lookback test procedure rulemaking, comments are also welcome on DOE's test procedure provisions for determining standby mode and off mode energy use.

I. Other Issues

DOE seeks comments on other relevant issues that would affect the test procedures for residential furnaces and boilers. Although DOE has attempted to identify those portions of the test procedure where it believes amendments may be warranted, interested parties are welcome to provide comments on any aspect of the test procedure, including updates of referenced standards, as part of this comprehensive 7-year-review process.

III. Public Participation

DOE invites all interested parties to submit in writing by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, comments and information on matters addressed in this notice and on other matters relevant to DOE's consideration of amended test procedures for residential furnaces and boilers.

After the close of the comment period, DOE will begin collecting data, conducting the analyses, and reviewing the public comments. These actions will be taken to aid in the development of a test procedure NOPR for residential furnaces and boilers.

DOE considers public participation to be a very important part of the process for developing test procedures. DOE actively encourages the participation and interaction of the public during the comment period at each stage of the rulemaking process. Interactions with and between members of the public provide a balanced discussion of the issues and assist DOE in the rulemaking process. Anyone who wishes to be added to the DOE mailing list to receive future notices and information about this rulemaking should contact Ms. Brenda Edwards at (202) 586–2945, or via e-mail at Brenda.Edwards@ee.doe.gov.

Issued in Washington, DC, on December 28, 2012.

Kathleen B. Hogan
Deputy Assistant Secretary for Energy Efficiency
Energy Efficiency and Renewable Energy

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