[6450-01-P]

DEPARTMENT OF ENERGY

10 CFR Part 431

[Docket Number EERE-2014-BT-TP-0008]

RIN: 1904-AD18

Energy Conservation Program for Certain Commercial and Industrial Equipment: Test Procedure for Commercial Water Heating Equipment

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 the DOE test procedures for commercial water heaters, unfired hot water storage tanks, and hot water supply boilers (henceforth, "commercial water heating equipment"). To inform interested parties and to facilitate this process, DOE has identified several issues associated with the current Federal test procedures on which DOE is particularly interested in receiving comment. In overview, the issues outlined in this document mainly concern updating the industry test standards that are currently incorporated by reference to the most recent versions, potential alternative methods for determining the efficiency of unfired storage tanks, potential changes to the method for setting the thermostat, potential clarifications in the thermal efficiency test method, and the potential inclusion of a test method

for commercial heat pump water heaters (HPWH). DOE anticipates that these issues (as well as any others which are identified during the course of this rulemaking) may lead to proposed test procedure amendments in a subsequent notice of proposed rulemaking (NOPR). DOE welcomes written comments and data from the public on all aspects of this test procedure, including topics not raised in this RFI.

DATES: DOE will accept written comments, data, and information on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Interested parties are encouraged to submit comments electronically. However, interested persons may submit comments, identified by docket number EERE-2014-BT-TP-0008 and/or regulatory identification number (RIN) 1904-AD18, by any of the following methods:

- Federal eRulemaking Portal: www.regulations.gov. Follow the instructions for submitting comments.
- E-mail: CommWaterHeatingEquip2014TP0008@ee.doe.gov. Include docket number EERE-2014-BT-TP-0008 and/or RIN 1904-AD18 in the subject line of the message. All comments should clearly identify the name, address, and, if appropriate, organization of the commenter. Submit electronic comments in WordPerfect, Microsoft Word, portable document format (PDF), or American Standard Code for Information Interchange (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 Office, Mailstop EE-5B, RFI for Commercial Water Heating Equipment, Docket No. EERE-2014-BT-TP-0008 and/or RIN 1904-AD18, 1000 Independence Avenue, SW.,

Washington, DC 20585-0121. 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 and/or RIN for this rulemaking. No telefacsimilies (faxes) will be accepted. For further information on the rulemaking process, see section III of this document (Public Participation).

Docket: The docket is available for review at www.regulations.gov, including Federal Register notices, comments, and other supporting documents/materials. 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 information that is exempt from public disclosure.

A link to the docket webpage can be found at: http://www.regulations.gov/#!docketDetail;D=EERE-2014-BT-TP-0008. This webpage contains a link to the docket for this notice on the www.regulations.gov website. The www.regulations.gov webpage contains simple instructions on how to access all documents, including public comments, in the docket.

FOR FURTHER INFORMATION CONTACT: Ms. Ashley Armstrong, U.S. Department of

Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE–5B, 1000 Independence Avenue, SW., Washington, DC 20585–0121. Telephone: (202) 586-6590. E-mail: Ashley.Armstrong@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. E-mail: Eric.Stas@hq.doe.gov.

For information on how to submit a comment, or review other public comments and the docket, contact Ms. Brenda Edwards, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, Mailstop EE-5B, 1000 Independence Avenue, SW, Washington, DC 20585-0121. Telephone: (202) 586-2945. E-mail: Brenda.Edwards@ee.doe.gov.

SUPPLEMENTARY INFORMATION:

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I. Authority and Background

Title III, Part C[1] of the Energy Policy and Conservation Act of 1975 (EPCA or the Act), Pub. L. 94-163 (42 U.S.C. 6311-6317, as codified), added by Pub. L. 95-619, Title IV, §441(a), established the Energy Conservation Program for Certain Industrial Equipment, which includes provisions covering the types of commercial water heating equipment that are the subject of this notice.[2] In general, this program is intended to improve the energy efficiency of certain types of commercial and industrial equipment. Relevant provisions of the Act 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). The testing requirements consist of test procedures that manufacturers of covered equipment must use as both the basis for certifying to DOE that their equipment complies with the applicable energy conservation standards adopted pursuant to EPCA, and for making representations about the efficiency of that equipment. (42 U.S.C. 6314; 42 U.S.C. 6316)

The initial test procedures for commercial water heating equipment corresponded to those referenced in the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and Illuminating Engineering Society of North America (IESNA) Standard 90.1 (i.e., ASHRAE Standard 90.1) which went into effect on October 24, 1992. EPCA requires that if an industry test procedure that is referenced in ASHRAE Standard 90.1 is amended, DOE must establish an amended test procedure to be consistent with the amended industry test procedure, unless DOE determines that the amended test procedure is not reasonably designed to produce

[1] For editorial reasons, upon codification in the U.S. Code, Part C was redesignated Part A-1.
[2] All references to EPCA in this document refer to the statute as amended through the American Energy Manufacturing Technical Corrections Act (AEMTCA), Pub. L. 112-210 (Dec. 18, 2012).

test results which reflect the energy efficiency, energy use, or estimated operating costs of the equipment during a representative average use cycle; in addition, DOE must determine that the amended test procedure is not unduly burdensome to conduct. (42 U.S.C. 6314(a)(2) and (4))

If DOE determines that a test procedure amendment is warranted, it must publish a proposed test procedure and offer the public an opportunity to present oral and written comments. (42 U.S.C. 6314(b)(1)-(2)) To amend a test procedure, DOE must determine the extent to which the proposed test procedure would alter the equipment's measured energy efficiency. If DOE determines that the amended test procedure would alter the measured efficiency of the covered equipment, DOE must amend the applicable energy conservation standard accordingly. (42 U.S.C. 6314(a)(4)(C); 42 U.S.C. 6293(e))

The Energy Independence and Security Act of 2007 (EISA 2007), Pub. L. 110-140, amended EPCA to require that at least once every 7 years, DOE must review test procedures for all covered equipment and either: (1) amend the test procedures if the Secretary determines that the amended test procedures would more accurately or fully comply with the requirements of 42 U.S.C. 6314(a)(2)-(3),[3] or (2) publish a notice of determination not to amend a test procedure. (42 U.S.C. 6314(a)(1)(A)) Under this requirement, DOE must review the test procedures for commercial water heating equipment no later than May 16, 2019, which is 7 years after the most

[3] 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 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 must provide that such costs are 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. The Secretary must provide information to manufacturers of covered equipment regarding representative average unit costs of energy.

recent final rule amending the Federal test method for commercial water heating equipment.[4] The final rule resulting from this rulemaking will satisfy the requirement to review the test procedure for commercial water heating equipment within 7 years.

DOE's commercial water heating equipment test procedure is found in the Code of Federal Regulations (CFR) at 10 CFR 431.106, Uniform test method for the measurement of energy efficiency of commercial water heaters and hot water supply boilers (other than commercial heat pump water heaters.[5] DOE's test procedure for commercial water heating equipment provides a method for determining the thermal efficiency and standby loss of commercial water heating equipment. DOE initially incorporated by reference certain sections of the American National Standards Institute Standard (ANSI) Z21.10.3-1998 (ANSI Z21.10.3-1998), Gas Water Heaters, Volume III, Storage Water Heaters, With Input Ratings Above 75,000 Btu Per Hour, Circulating and Instantaneous. 69 FR 61974, 61984 (Oct. 21, 2004). On May 16, 2012, DOE published a final rule in the Federal Register to update the test procedures to incorporate by reference the most recent version of the relevant industry test procedure at the time of publication, ANSI Z21.10.3-2011 (same title). 77 FR 28928. The most recent updates did not materially alter the procedure.

The American Energy Manufacturing Technical Corrections Act (AEMTCA), Pub. L. 112–210, was signed into law on December 18, 2012 and amended EPCA to require that DOE publish a final rule establishing a uniform efficiency descriptor and accompanying test methods

[4] DOE published a final rule in the Federal Register on May 16, 2012, that, in relevant part, amended its test procedure for commercial water-heating equipment. 77 FR 28928.
[5] DOE has reserved a place in its regulations for commercial heat pump water heaters at 10 CFR 431.107, Uniform test method for the measurement of energy efficiency for commercial heat pump water heaters.

for residential water heaters and certain commercial water heating equipment. (42 U.S.C. 6295(e)(5)) AEMTCA required DOE to replace the current efficiency metric for residential water heaters (Energy Factor), and the current efficiency metrics for commercial water heaters (thermal efficiency and standby loss), with a uniform efficiency descriptor. (42 U.S.C. 6295(e)(5)(C)) Further, AEMTCA required that the uniform efficiency descriptor and accompanying test method apply, to the maximum extent possible, to all water heating technologies currently in use and to future water heating technologies. (42 U.S.C. 6295(e)(5)(H)) However, AEMTCA allowed DOE to exclude from the uniform efficiency descriptor specific categories of covered water heaters that do not have residential uses, that can be clearly described, and that are effectively rated using the current thermal efficiency and standby loss descriptors. (42 U.S.C. 6295(e)(5)(F))

DOE published an RFI on January 11, 2013 that requested feedback on several topics mainly associated with: (1) currently available efficiency metrics and test procedures for rating the efficiency of residential and certain commercial water heaters; (2) the requirements for a uniform metric set forth in the AEMTCA; and (3) available options for DOE to address those statutory requirements. 78 FR 2340. After considering comments on the RFI, DOE published a NOPR in the Federal Register on November 4, 2013 (henceforth the "November 2013 NOPR") that proposed to update the test procedures for residential and certain commercial water heaters. 78 FR 66202.

The November 2013 NOPR proposed to modify the current residential water heater metric (Energy Factor) to be used as the uniform descriptor for all residential and certain

commercial water heating equipment that have residential uses (*i.e.*, "light commercial water heaters"). DOE also proposed to exclude certain water heaters from coverage under the uniform descriptor that have no residential use, can be clearly identified and described, and that are effectively rated using the current thermal efficiency and standby loss efficiency descriptors. 78 FR 66202, 66206 (Nov. 4, 2013).

In this rulemaking for the test procedures for commercial water heating equipment, DOE is only considering the commercial water heating equipment that was not covered by the test method developed for the November 2013 NOPR. DOE will update the scope of this rulemaking as necessary based on changes, if any, to the scope of the final rule establishing the uniform efficiency descriptor.

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 customer 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 commercial water heating equipment. In particular, DOE seeks comment and information on the specific topics discussed below.

II. Discussion

A. Updated Industry Test Method

Beginning on May 13, 2013, the industry test method for measuring energy efficiency for

commercial water heaters and hot water supply boilers referenced by the DOE test procedure is ANSI Z21.10.3-2011. 10 CFR 431.106. The DOE test procedure references Exhibit G1 and Exhibit G2 of ANSI Z21.10.3-2011 for measuring thermal efficiency and standby loss, respectively. The most recent edition of the industry test method, ANSI Z21.10.3-2013/Canadian Standards Association (CSA) 4.3-2013, Gas-fired Water Heaters, Volume III, Storage Water Heaters with Input Ratings above 75,000 Btu per Hour, Circulating and Instantaneous, was released in 2013. The only substantive difference between the 2011 and 2013 version, as it pertains to the sections referenced by DOE, were changes in the numbering and order of sections.

DOE plans to consider updating the DOE test procedure to reference the updated industry test method for measuring thermal efficiency and standby loss to ANSI Z21.10.3-2013/CSA 4.3 - 2013 Annex E.1 and Annex E.2, respectively. These references shall replace previous references to Exhibits G1 and G2 in the 2011 industry test method.

Issue 1: DOE requests feedback on the appropriateness of using the ANSI Z21.10.3-2013/CSA 4.3-2013 industry test method to replace the current reference to ANSI Z21.10.3-2011. DOE is also interested in information and data pertaining to the repeatability of thermal efficiency and standby loss tests included in the ANSI Z21.10.3-2011 test method and the ANSI Z21.10.3-2013 test method.

B. Unfired Hot Water Storage Tanks

DOE defines an "unfired hot water storage tank" as "a tank used to store water that is

heated externally, and that is industrial equipment." 10 CFR 431.102. As explained in the November 2013 NOPR, DOE has proposed to exclude unfired hot water storage tanks from the uniform efficiency descriptor required by AEMTCA. 78 FR 66202, 66207 (Nov. 4, 2013). Therefore, DOE plans to address the test procedure for this equipment in this rulemaking.

The Federal standard for unfired hot water storage tanks requires a minimum level of tank insulation, which is an R-value of 12.5. 10 CFR 431.110. DOE's test procedure for commercial water heating equipment at 10 CFR 431.106 does not currently include a method of testing energy efficiency of unfired hot water storage tanks. Although DOE does not specify a test method for unfired storage tanks in 10 CFR 431.106, DOE defines "R-value" as follows:

> "*R-value* means the thermal resistance of insulating material as determined based on ASTM Standard Test Method C177-97 or C518-91 and expressed in (°F•ft^2•h/Btu)."
>
> 10 CFR 431.102.

Thus, to determine the R-value of the insulation, one of two industry standards must be used: (1) American Society for Testing and Materials (ASTM) C177-97, Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; or (2) ASTM C518-10, Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus. DOE's definition of "R-value" inherently includes the industry test methods that should be used for determining the R-value of the storage tank insulation. However, the ASTM test methods C518

and C177 are not necessarily designed for measuring the R-value of test specimens, in this case unfired storage tanks.

While the two test methods both measure thermal transmission properties, they vary in complexity and apparent difficulty. The two test methods differ in complexity in terms of the measuring equipment required. For instance, ASTM C518 requires the use of a heat flux transducer to directly measure the heat flux through a specimen, while ASTM C177 only requires temperature sensors (e.g., thermocouples, thermistors). However, both test methods have very similar test procedures, with the main similarity being the requirement of the establishment of thermal equilibrium within the apparatus.

There are also minor sampling differences between the two methods: ASTM C177 requires three sampling runs of at least thirty minutes, while ASTM C518 requires five samplings in intervals of at least ten minutes. However, ASTM C518 notes that the time between sample readings may need to be increased to thirty minutes or longer for high-resistance or high-density specimens. Another major difference between the two methods is that the ASTM C518 method requires the constant calculation of the specimen's thermal conductivity during a test run, while ASTM C177 only stipulates acquisition of temperature and power data (and calculates the thermal conductivity after the test is completed based on the data).

The two referenced ASTM test methods also share many similarities: specifying the appropriate orientations of apparatus components, providing instructions for calibrating the test measurement system, and including procedures for specimen conditioning and stabilization. In

addition, both test methods require flat specimens.

DOE is considering several options to improve the test method for commercial unfired hot water storage tanks. First, DOE is considering establishing a test method in 10 CFR 431.106 to clarify the applicable test procedure for unfired storage tanks. DOE is considering the potential for a single method of determining R-value to ensure that all R-values are determined on a consistent and equitable basis. However, DOE notes that unfired hot water storage tank manufacturers may not test the insulation of their tanks, but rather rely on the R-value information provided by the insulation manufacturer. Furthermore, DOE is considering whether having a test procedure that determines R-value for unfired storage tanks may be inappropriate, given that the methods for determining R-value are intended for determining the R-value of a flat sample, rather than an entire storage tank. In addition, DOE notes that determining the R-value of a single sample does not allow for the assessment of whether this value is applicable to the entire surface of the tank, including bottom, top, and fitting areas. DOE examined the product literature for the commercially-available unfired hot water storage tanks that DOE identified on the market and found that approximately 55 percent of the available models were shipped without any insulation, but rather were insulated in the field. Thus, DOE is considering alternative metrics, such as a standby loss test for unfired hot water storage tanks.

Since unfired hot water storage tanks do not consume gas or electricity, any test procedure to measure standby loss would not include a measurement of energy consumption. Rather, the test could entail running pre-heated water at a specified temperature through the vessel until a specified mean internal tank temperature is achieved, and measuring the thermal

energy loss of the water over a given period of time. In addition, a method to measure storage volume of the tank would need to be developed, which could entail measuring the weight of the tank before and after filling it with water and calculating the storage volume based on the change in weight and density of water. DOE requests comment on several aspects of a potential standby loss test procedure for commercial unfired storage tanks including: (1) target mean tank temperature; (2) ambient air temperature; (3) time duration of the test; (4) location of temperature sensors; and (5) whether to keep the tank connected or disconnected to inlet and outlet piping during the test.

Issue 2: DOE requests comment on whether updates to DOE's incorporated test methods for unfired hot water storage tanks are needed. In particular, DOE requests comment on whether a single test method for R-value should be used (and if so, which industry method is most appropriate), or whether replacing R-value with standby loss or some other metric as the energy efficiency descriptor for unfired hot water storage tanks would be preferable. If a new metric such as standby loss is more appropriate than R-value, DOE requests feedback on the best way to establish a standby loss test and the parameters of such a test method.

C. Setting the Thermostat for Commercial Water Heater Testing

DOE's test method for measuring energy efficiency of commercial water heating equipment currently requires specific conditions be met for inlet water temperature and the mean tank temperature before the test begins. In particular, ANSI Z21.10.3-2011, Exhibit G, section 1.g (which is incorporated by reference into the DOE test procedure) requires that before starting testing, the thermostat shall be set by starting with the water in the system at 70° ± 2°F (21° ±

1°C) and the maximum mean temperature of the water after the thermostat reduces the gas supply to a minimum, shall be 140° ± 5°F (60°± 3°C).

DOE understands that some units may experience issues pertaining to the above set point conditions. Specifically, for certain commercial water heaters, the mean tank temperature may not reach the required 140° ± 5°F (60° ± 3°C) after the first cut-out, even when the thermostat is set to the maximum setting. In such cases, the outlet temperature of the hot water may be at, or even well above 140° ± 5°F (60° ± 3°C); however, due to stratification in the tank, the mean tank temperature may not reach 140° ± 5°F (60° ± 3°C). The Department requests comment on potential test procedure changes to address this issue, including either a lower mean tank temperature requirement (if feasible) or a measurement of outlet water temperature rather than mean tank temperature.

Issue 3: DOE requests comment on potential test procedure changes to address issues with setting the tank thermostat, including (but not limited to) either a lower mean tank temperature requirement or a measurement of outlet water temperature rather than mean tank temperature.

D. Clarification of the Thermal Efficiency Test Procedure

DOE's test method for measuring the thermal efficiency of commercial water heaters incorporates by reference ANSI Z21.10.3-2011, Exhibit G, section 1. In particular, section 1.j describes the procedure used to conduct the 30-minute test and the technique to calculate the thermal efficiency. DOE notes that the formula used to compute the thermal efficiency does not account for any changes in heat content stored inside the water heater during the test. This

change in stored energy could change the computation of thermal efficiency since some of the energy input to the water heater does not appear as heat delivered by the water heater. DOE requests comment on whether such a term is needed or whether provisions should be added to the test procedure to ensure that the temperature of the water in the tank does not change from the start of the 30-minute test to the end. Furthermore, DOE notes that the only specification on the rate of flow is that the outlet temperature is constant for 3 minutes. This specification makes no mention of the temperature within the water heater, the status of the burners or heating elements before and during the test, appropriate levels of flow rates, or the fuel consumption rate for water heaters with variable firing rates. DOE requests comment on whether a clarification is required to ensure that the flow rate implemented during this test is expected to require continuous burner operation or whether the water heater is allowed to cycle its burner to meet the demand imposed by the water draw.

Issue 4: DOE requests comment on whether clarifications are needed to the test procedure for determining thermal efficiency of commercial water heaters to indicate required flow rates and to account for potential changes in stored heat within the water heater from the start of the 30-minute test to the end.

E. Commercial Heat Pump Water Heaters

Currently, DOE does not have a test procedure for commercial heat pump water heaters (although a place is reserved at 10 CFR 431.107). However, DOE will consider whether to adopt test procedures for such equipment in this rulemaking. DOE is aware of two industry test methods that could potentially be adopted by DOE as the test method for commercial heat pump

water heaters. In particular, DOE is aware of ANSI/ASHRAE Standard 118.1-2012, Method of Testing for Rating Commercial Gas, Electric, and Oil Service Water-Heating Equipment, and the Air-conditioning, Heating, and Refrigeration Institute (AHRI) Standard 1300, 2013 Standard for Performance Rating of Commercial Heat Pump Water Heaters. ASHRAE 118.1-2012 includes test methods for determining coefficient of performance (COP) and standby loss for commercial heat pump water heaters, and AHRI 1300 references the ASHRAE 118.1-2012 test method and also specifies various rating conditions (*e.g.*, evaporator entering air temperatures (for air-source heat pump water heaters), evaporator entering water temperatures (for water-source heat pump water heaters), and condenser entering water temperatures). DOE may consider adopting these industry test methods or other methods as part of this rulemaking and seeks comment regarding the appropriate test method for commercial heat pump water heaters.

Issue 5: DOE seeks comment on appropriate test procedures for commercial heat pump water heaters. In particular, DOE is interested in receiving comments and information relating to the industry test methods that are available (*i.e.*, ASHRAE 118.1-2012 and AHRI 1300) and whether any modifications to those standards would be needed for adoption as the Federal test method.

F. Other Issues

DOE also seeks comments on other relevant issues that would affect the test procedures for commercial water heating equipment. 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 rulemaking.

III. Public Participation

A. Submission of Comments

DOE will accept comments, data, and information regarding this RFI no later than the date provided in the **DATES** section at the beginning of this RFI. Interested parties may submit comments using any of the methods described in the **ADDRESSES** section at the beginning of this RFI. 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 commercial water heating equipment.

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 in 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.

B. Issues on Which DOE Seeks Comment

Although DOE welcomes comments on any aspect of this RFI and its test procedure for commercial water heating equipment, DOE is particularly interested in receiving comments and views of interested parties concerning the following issues:

1. DOE requests feedback on the appropriateness of using the ANSI Z21.10.3-2013/CSA 4.3-2013 industry test method to replace the reference to ANSI Z21.10.3-2011. DOE is also interested in information and data pertaining to the repeatability of thermal efficiency and standby loss tests included in the ANSI Z21.10.3-2011 test method and the ANSI Z21.10.3-2013 test method.
2. DOE requests comment on whether updates to DOE's incorporated test methods for unfired hot water storage tanks are needed. In particular, DOE requests comment on whether a single test method for R-value should be used (and if so, which industry method is most appropriate), or whether replacing R-value with standby loss as the energy efficiency descriptor for unfired hot water storage tanks would be preferable. If a new metric such as standby loss is more appropriate than R-value, DOE requests feedback on the best way to establish a standby loss test and the parameters of such a test method.
3. DOE requests comment on potential test procedure changes to address issues with setting the tank thermostat, including (but not limited to) either a lower mean tank temperature requirement or a measurement of outlet water temperature rather than mean tank temperature.
4. DOE requests comment on whether clarifications are needed to the test procedure for thermal efficiency of commercial water heaters to indicate required flow rates and to account for potential changes in thermal energy within the water heater from the start of the 30-minute test to the end.
5. DOE seeks comment on appropriate test procedures for commercial heat pump water heaters. In particular, DOE is interested in receiving comments and information relating to the

industry test methods that are available (*i.e.*, ASHRAE 118.1-2012 and AHRI 1300) and whether any modifications to those standards would be needed for adoption as the Federal test method.

Issued in Washington, DC, on February 21, 2014.

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