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[6450-01-P]

DEPARTMENT OF ENERGY

10 CFR Part 431

[Docket No. EERE-2014-BT-TP-0006]

RIN: 1904-AD16

Energy Conservation Program for Certain Commercial and Industrial Equipment: Test Procedure for Commercial Packaged 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 commercial packaged boilers. This rulemaking is intended to fulfill DOE's statutory obligation to review its test procedures for covered products at least once every seven years. As part of this process, DOE is considering the potential for adoption of part-load efficiency measurement as part of this test procedure rulemaking for commercial packaged boilers. To help inform the test procedure rulemaking, DOE has identified a variety of issues on which it is seeking comment, as outlined in this document; these issues mainly concern part-load operation and efficiency, appropriate operating conditions for both part-load and full-load operation, and the integration of part-load measurements into the applicable energy efficiency metric. Although DOE welcomes comment

on all aspects of its test procedure, DOE is particularly interested in receiving comments and data from stakeholders and the public on these topics.

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

ADDRESSES: Interested persons are encouraged to submit comments electronically. However, interested persons may submit comments, identified by docket number EERE-2014-BT-TP-0006 or Regulation Identifier Number (RIN) 1904-AD16, by any of the following methods:

- Federal eRulemaking Portal: www.regulations.gov. Follow the instructions for submitting comments.
- E-mail: CommPackagedBoilers2014TP0006@ee.doe.gov Include docket number EERE-2014-BT-TP-0006 and/or RIN 1904-AD16 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, 1000 Independence Avenue SW, Washington, D.C. 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 Office, 6th Floor, 950 L'Enfant Plaza SW, Washington, D.C. 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 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 (search EERE-2014-BT-TP-0006). 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 web page can be found at: http://www1.eere.energy.gov/buildings/appliance_standards/product.aspx/productid/74. This web page contains a link to the docket for this notice on the www.regulations.gov site. The www.regulations.gov webpage contains instructions on how to access all documents, including public comments, in the docket.

FOR FURTHER INFORMATION CONTACT: Mr. James Raba, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies, EE-5B,

1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-8654. Email: commercial_packaged_boilers@ee.doe.gov.

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

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

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I. Authority and Background

Title III, Part C[1] of the Energy Policy and Conservation Act of 1975 (EPCA), Pub. L. 94-163 (42 U.S.C. 6311-6317, as codified), Pub. L. 95-619, Title IV § 441(a), sets forth various provisions designed to improve energy efficiency for consumer products and certain commercial and industrial equipment and established the "Energy Conservation Program for Certain

[1] For editorial reasons, upon codification in the U.S. Code, Part C was redesignated Part A-1.

Industrial Equipment" (hereafter referred to as "covered equipment").[2] The Energy Policy Act of 1992 (EPACT 1992), Public Law 102-486, amended EPCA to add commercial packaged boilers as a type of covered equipment. (42 U.S.C. 6311(1)) The Energy Independence and Security Act of 2007 (EISA 2007), Public Law 110-140, further revised EPCA to require that not later than six years after issuance of any final rule establishing or amending a standard,[3] the Secretary of Energy must publish either a notice of determination that the standards for a given type of equipment do not need to be amended, or a notice of proposed rulemaking (NOPR) including new proposed standards. (42 U.S.C. 6313(a)(6)(C)(i)) Additionally, EPCA (as amended) requires DOE to update its test method each time the relevant industry test procedure is modified (42 U.S.C. 6314(a)(4)(B)) and to evaluate its test procedure for each covered class once every seven years (42 U.S.C. 6314(a)(1)(A)).

To fulfill these requirements set forth in EPCA, DOE has initiated a rulemaking to consider amended energy conservation standards for commercial packaged boilers, and, in parallel, DOE will evaluate the commercial packaged boilers test procedure found in the Code of Federal Regulations (CFR) at 10 CFR 431.86, Uniform test method for the measurement of energy efficiency of commercial packaged boilers. DOE issued a notice of public meeting and availability of the Framework Document on August 28, 2013, which was published in the *Federal Register* on September 3, 2013. 78 FR 54197. The Framework Document explains the issues, analyses, and process that DOE is considering for the development of energy conservation standards. Both in the Framework Document and in a public meeting held on

[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).
[3] The AEMTCA amendments to EPCA later revised the timeframe for this review requirement for energy conservation standards to "[e]very 6 years." (42 U.S.C. 6313(a)(6)(C)(i))

October 1, 2013, DOE solicited public comment regarding its approach to the rulemaking process and identified particular issues for which DOE sought comment. The comments received included suggestions for the revision of the DOE test procedure.

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 requests information, comment, and supporting data about representative and repeatable methods for measuring the energy use of commercial packaged boilers. In particular, DOE seeks comment and information about the topics below.

II. Discussion

The DOE test procedure for commercial packaged boilers, set forth at 10 CFR 431.86, incorporates Hydronics Institute /Air-Conditioning, Heating, and Refrigeration Institute Standard BTS–2000 (Rev 06.07), *Method to Determine Efficiency of Commercial Space Heating Boilers*. This test procedure determines the steady-state efficiency of steam or hot water boilers operating at full load.[4] However, through a review of equipment available in the market, DOE understands that the commercial packaged boiler industry is increasingly utilizing modulating burners. Modulating burners are capable of reducing the fuel input rate to more closely match the space heating demand. Because the current test procedure at 10 CFR 431.86 only measures steady-state efficiency at maximum firing rate, it does not account for differences in efficiency when the boiler is operated at lower firing rates. Therefore, DOE is considering test procedure

[4] Thermal efficiency is measured for all types of boilers except for oil-fired and gas-fired hot water boilers greater than 2,500,000 Btu/h in rated capacity, for which combustion efficiency is used.

amendments that would adopt part-load test conditions and measurements to more accurately reflect the efficiency of commercial packaged boilers that use modulating burner technology.

In general, DOE requests comment, information, and data about adopting methodologies and measurements to determine part-load efficiency of commercial packaged boilers. Further, DOE particularly requests comment, information, and data about the following:

(1) Should DOE only consider adding a measurement of commercial packaged boiler efficiency at the minimum fuel input ratio in addition to the maximum fuel input? If not, then at what fuel input ratio(s) – fraction of maximum rated capacity – should the efficiency of a commercial packaged boiler be measured?

(2) What are the appropriate inlet and outlet water temperatures (or the appropriate mean temperature and temperature difference between the inlet and outlet water temperatures (ΔT)) for part-load testing conditions of hot water boilers. Should this temperature difference (ΔT) be the same as when testing at full capacity?

(3) How many hours can modulating burners be expected or designed to operate under part-load and full-load conditions, respectively, over the course of a year in a typical or average installation?

(4) What benefits and burdens are associated with a part-load efficiency rating and combining the different operating points into a single weighted metric? What are potential ways to combine them?

(5) When considering part-load operation, how would the measurement and inclusion of jacket, sensible, and infiltration losses be addressed in an annual weighted efficiency metric?

(6) What, if any, would be the added test burden of accounting for part-load operation and associated measurement of jacket, sensible, and infiltration losses?

DOE understands that current test conditions (*i.e.*, temperatures and pressures) required under 10 CFR 431.86 and BTS-2000 may differ from typical operating conditions in the field and/or the conditions for which a boiler was designed. While laboratory testing conditions cannot necessarily duplicate field performance, they are intended to provide a reasonable basis for comparison of boiler efficiency and to generate repeatable results, while approximating actual operating conditions to the extent possible. DOE understands that testing conditions prescribed by BTS-2000 may warrant revision. Accordingly, DOE seeks input and comment about:

(1) What are appropriate supply and return water temperatures for hot water boilers operating at full-load and the effect on steady-state efficiency (thermal or combustion) of this potential revision?

(2) What is appropriate steam pressure for steam boilers operating at full-load and the effect on steady-state efficiency (thermal or combustion) of this potential revision? What are concerns, if any, about the impacts on the amount of water carry over and the system operation?

(3) What design characteristics of boilers currently on the market would potentially prohibit testing (short-term operation) at the operating conditions currently prescribed by 10 CFR 431.86 and BTS-2000?

III. Public Participation

DOE invites all interested parties to submit in writing by the date specified previously in the **DATES** section of this RFI, comments and information on matters addressed in this notice and on other matters relevant to DOE's consideration of amended test procedures for commercial packaged 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 email at Brenda.Edwards@ee.doe.gov.

Issued in Washington, D.C., on

February 7, 2014.

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