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This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF ENERGY

10 CFR Part 430

[Docket No. EERE-2009-BT-TP-0013]

RIN 1904-AB95

Energy Conservation Program for Consumer Products: Test Procedures for Residential Water Heaters, Direct Heating Equipment, and Pool Heaters

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

ACTION: Notice of proposed rulemaking and announcement of public meeting.

SUMMARY: In order to implement recent amendments to the Energy Policy and Conservation Act of 1975 (EPCA), the U.S. Department of Energy (DOE) proposes to amend its test procedures for residential direct heating equipment and pool heaters to provide for measurement of standby mode and off mode power use by these products. Where appropriate, the amendments would incorporate into the DOE test procedures relevant provisions from the International Electrotechnical Commission's (IEC) Standard 62301, "Household electrical appliances—Measurement of standby power" (First Edition 2005-06), as well as language to clarify application of these provisions as they specifically relate to measurement of electrical standby mode and off mode power consumption in direct heating equipment and pool heaters.

This rulemaking also proposes a number of definitions for key terms. DOE has tentatively concluded that no amendments are necessary to the test procedure for residential water heaters to address standby mode and off mode power use, because the existing test procedures for water heaters already fully account for and incorporate the standby mode and off mode energy consumption. In addition, DOE announces a public meeting to discuss and receive comments on the issues presented in this notice.

DATES: DOE will hold a public meeting Friday, September 24, 2010, from 9 a.m. to 4 p.m., in Washington, DC. DOE must receive requests to speak at the public meeting before 4 p.m., Friday, September 10, 2010. DOE must receive a signed original and an electronic copy of statements to be given at the public meeting before 4 p.m., Friday, September 3, 2010.

DOE will accept comments, data, and information regarding the notice of proposed rulemaking (NOPR) before and after the public meeting, but no later than November 15, 2010. See section V, "Public Participation," of this NOPR for details.

ADDRESSES: The public meeting will be held at the U.S. Department of Energy, Forrestal Building, Room 1E-245, 1000 Independence Avenue, SW., Washington, DC 20585-0121. To attend the public meeting, please notify Ms. Brenda Edwards at (202) 586-2945. (Please note that foreign nationals visiting DOE Headquarters are subject to advance security screening procedures. Any foreign national wishing to participate in the public meeting should advise DOE as soon as possible by contacting Ms. Edwards to initiate the necessary procedures.)

Any comments submitted must identify the NOPR on Test Procedures for Residential Water Heaters, Direct Heating Equipment, and Pool Heaters, and provide the docket number EERE-2009-BT-TP-0013 and/or Regulatory Information Number (RIN) 1904-AB95. Comments may be submitted using any of the following methods:

1. *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the instructions for submitting comments.

2. *E-mail:* EISA-Heat-Equip-2010-TP-0013@ee.doe.gov. Include docket number EERE-2009-BT-TP-0013 and/or RIN 1904-AB95 in the subject line of the message.

3. *Postal Mail:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, Mailstop EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Please submit one signed paper original.

4. *Hand Delivery/Courier:* Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, 950 L'Enfant Plaza, SW., Suite 600, Washington, DC 20024. Telephone: (202) 586-2945. Please submit one signed paper original.

For detailed instructions on submitting comments and additional information on the rulemaking process, see section V, "Public Participation," of this document.

Docket: For access to the docket to read background documents or comments received, visit the U.S. Department of Energy, Resource Room of the Building Technologies Program, 950 L'Enfant Plaza, SW., Suite 600, Washington, DC 20024, (202) 586-2945, between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays. Please call Ms. Brenda Edwards at the above telephone number for additional information about visiting the Resource Room.

FOR FURTHER INFORMATION CONTACT: Mr. Mohammed Khan, U.S. Department of Energy, Energy Efficiency and Renewable Energy, Building Technologies Program, EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-7892. E-mail: Mohammed.Khan@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 or review public comments and on how to participate in the public meeting, contact Ms. Brenda Edwards, 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) 586-2945. E-mail: Brenda.Edwards@ee.doe.gov.

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I. Background and Authority

Title III of the Energy Policy and Conservation Act (42 U.S.C. 6291, *et seq.*; “EPCA” or, in context, “the Act”) sets forth a variety of provisions designed to improve energy efficiency. Part A of Title III (42 U.S.C. 6291–6309) establishes the “Energy Conservation Program for Consumer Products Other Than Automobiles,” including residential water heaters, direct heating equipment, and pool heaters (all of which are referred to below as “covered products”).¹ (42 U.S.C. 6291(1)–(2) and 6292(a)(4), (9) and (11))

Under the Act, the overall program consists essentially of three parts: (1) Testing; (2) labeling; and (3) Federal

energy conservation standards. The testing requirements consist of test procedures, prescribed under EPCA, that manufacturers of covered products must use as the basis for certifying to DOE that their products comply with applicable energy conservation standards adopted under EPCA and for representations about the energy consumption or energy efficiency of those products. Similarly, DOE must use these test procedures whenever testing is required in an enforcement action to determine whether the products comply with energy conservation standards adopted pursuant to EPCA.

Under 42 U.S.C. 6293, EPCA sets forth criteria and procedures for DOE’s adoption and amendment of such test procedures. EPCA provides that any test procedures prescribed or amended shall be reasonably designed to produce test results which measure energy efficiency, energy use, or estimated annual operating cost of a covered product during a representative average use cycle or period of use, and shall 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 thereon. (42 U.S.C. 6293(b)(2)) Finally, in any rulemaking to amend a test procedure, DOE must determine to what extent, if any, the proposed test procedure would alter the measured energy efficiency of any covered product as determined under the existing test procedure. (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))

DOE’s test procedures for residential water heaters are found in the Code of Federal Regulations (CFR) at 10 CFR 430.23(e) and 10 CFR part 430, subpart B, appendix E. The test procedures include provisions for determining the energy efficiency (energy factor (EF)), as well as the annual energy consumption of these products.

The direct heating equipment covered product (not including furnaces) is referred to as “home heating equipment” in CFR. Unlike central heating furnaces, direct heating equipment is a covered product which is designed to furnish warmed air to the living space of a residence, directly from the device, without duct connections. There are separate test procedures for the two classes of home heating equipment, specifically 10 CFR 430.23(g) and 10

CFR part 430, subpart B, appendix G for unvented home heating equipment, and 10 CFR 430.23(o) and 10 CFR part 430, subpart B, appendix O for vented home heating equipment. Taken together, these two classes of home heating equipment represent “direct heating equipment,” the covered product listed at 42 U.S.C. 6292(a)(9). (Hereafter in this notice, the terms “vented heater” and “unvented heater” are used to describe the two types of direct heating equipment.) The vented heater test procedures include provisions for determining energy efficiency (annual fuel utilization efficiency (AFUE)), as well as annual energy consumption. The unvented heater test procedures currently have no provisions for determining energy efficiency; however, for unvented heaters that are the primary heating source for the home, there is a calculation of annual energy consumption based on a single assignment of active mode hours. For unvented heaters that are not the primary heating source for the home, there are no calculation provisions for efficiency or annual energy consumption.

DOE’s test procedures for pool heaters are found at 10 CFR 430.23(p) and 10 CFR part 430, subpart B, appendix P. The test procedures include provisions for determining two energy efficiency descriptors (*i.e.*, thermal efficiency and pool heater heating seasonal efficiency), as well as annual energy consumption.

On December 19, 2007, the Energy Independence and Security Act of 2007 (EISA 2007), Public Law 110–140, was enacted. The EISA 2007 amendments to EPCA, in relevant part, require DOE to amend the test procedures for all covered products to include measurement of standby mode and off mode energy consumption. Specifically, section 310 of EISA 2007 provides definitions of “active mode,” “standby mode,” and “off mode” (42 U.S.C. 6295(gg)(1)(A)); however, the statute permits DOE to amend these definitions in the context of a given product (42 U.S.C. 6295(gg)(1)(B)). The legislation requires integration of such energy consumption into the overall energy efficiency, energy consumption, or other energy descriptor for each covered product, unless the Secretary determines that—(i) the current test procedures for a covered product already fully account for and incorporate the standby and off mode energy consumption of the covered product; or (ii) such an integrated test procedure is technically infeasible for a particular covered product, in which case the Secretary shall prescribe a separate standby mode and off mode

¹ All references to EPCA refer to the statute as amended, including through the Energy Independence and Security Act of 2007, Public Law 110–140.

energy use test procedure for the covered product, if technically feasible. (42 U.S.C. 6295(gg)(2)(A)).

Under the statutory provisions introduced by EISA 2007, any such amendment must consider the most current versions of International Electrotechnical Commission (IEC) Standard 62301, "Household electrical appliances—Measurement of standby power" (First Edition 2005–06) and IEC Standard 62087, "Methods of measurement for the power consumption of audio, video, and related equipment" (Second Edition, 2008–09).² *Id.* Further, section 310 of EISA 2007 provides that any final rule establishing or revising energy conservation standards adopted on or after July 1, 2010, must incorporate standby mode and off mode energy use. (42 U.S.C. 6295(gg)(3)(A)).

Accordingly, pursuant to section 310 of EISA 2007, DOE's residential water heater, direct heating equipment, and pool heater test procedures must account for standby mode and off mode energy consumption. (42 U.S.C. 6295(gg)(2)) DOE test procedures are needed that account for standby mode and off mode energy use (to the extent those operational modes apply to the products in question), in order to permit manufacturers to measure and certify compliance with future amended energy conservation standards that address those modes for the products that are the subject of this rulemaking. If finalized, today's proposal would also provide DOE a means for determining compliance with any future standards adopted for these products that include standby mode and off mode energy consumption.

II. Summary of the Proposal

In today's NOPR, DOE has tentatively concluded that for residential water heaters, there is no need to amend the test procedures pursuant to EISA 2007. Specifically, because the current test procedures for residential water heaters already fully account for and incorporate standby mode energy consumption, and because off mode is not applicable to water heaters, no amendment is required. (42 U.S.C. 6295(gg)(2)(A)(i)) A more complete discussion is provided below in section III.A.

For direct heating equipment and pool heaters, DOE is proposing to amend the test procedures in order to:

- (1) Address the statutory requirement to expand test procedures to incorporate measurement of standby mode and off

mode power consumption; and (2) provide a foundation for DOE to develop, implement, and ensure compliance with amended energy conservation standards in the future that address the energy use of these products when in standby mode and off mode.

In addition to these statutory requirements for amended test procedures, EISA 2007 has three separate provisions regarding the inclusion of standby mode and off mode energy use in any energy conservation standard, which have bearing on the current test procedures rulemaking. First, test procedure amendments to include standby mode and off mode energy consumption shall not be used to determine compliance with standards established prior to the adoption of such test procedure amendments. (42 U.S.C. 6295(gg)(2)(C)) Second, standby mode and off mode energy use must be included into a single amended or new standard for a covered product adopted in a final rule after July 1, 2010. Finally, a separate standard for standby mode and off mode energy consumption is required if a single amended or new standard is not feasible. (42 U.S.C. 6295(gg)(3)(B))

In order to accommodate the above-mentioned first provision, DOE clarifies that today's proposed amended test procedures would not alter the measures of energy efficiency used in existing energy conservation standards; therefore, this proposal would not affect a manufacturer's ability to demonstrate compliance with previously-established standards. These amended test procedures would become effective, in terms of adoption into the CFR, 30 days after the date of publication in the **Federal Register** of the final rule in this test procedures rulemaking. However, DOE is proposing added language to the regulations codified in the CFR that would state that any added procedures and calculations for standby mode and off mode energy consumption resulting from implementation of the relevant provisions of EISA 2007 need not be performed at this time to determine compliance with the current energy conservation standards. Subsequently, and consistent with the second provision above, manufacturers would be required to use the amended test procedures' standby mode and off mode provisions to demonstrate compliance with DOE's energy conservation standards on the compliance date of a final rule establishing amended energy conservation standards for these products that address standby mode and off mode energy consumption, at which time the limiting statement in the DOE test procedure would be removed.

Further clarification would also be provided that as of 180 days after publication of a test procedure final rule, any representations as to the standby mode and off mode energy consumption of the products that are the subject of this rulemaking would need to be based upon results generated under the applicable provisions of this test procedure. (42 U.S.C. 6293(c)(2))

On November 24, 2006, DOE published a notice in the **Federal Register** announcing the availability of and seeking comment on a framework document to initiate rulemaking to consider amended energy conservation standards for residential water heaters, direct heating equipment, and pool heaters (hereafter the November 2006 Framework Document). 71 FR 67825. The issuance of a framework document is the first step in conducting an appliance standards rulemaking.

The November 2006 Framework Document was issued before the enactment of EISA 2007, and consequently, it did not address the possible amendments to the test procedure associated with the EISA 2007 legislative charge (*i.e.*, the standby mode and off mode provisions in 42 U.S.C. 6295(gg)(3)) DOE issued its final rule revising energy conservation standards for residential water heaters, direct heating equipment, and pool heaters on March 31, 2010, which was published in the **Federal Register** on April 16, 2010. 75 FR 20112. Because publication of this final rule amending the energy conservation standards for these products was required to be completed before July 1, 2010 (the date after which any final rule establishing or revising a standard must incorporate standby mode and off mode energy use), this standards final rule did not necessarily need to incorporate standby mode and off mode energy use. Nonetheless, today's proposal for amended test procedures will allow consideration of the standby mode and off mode energy use of these products in a subsequent standards rulemaking (*e.g.*, standards adopted after July 1, 2010).

As currently drafted, three of the test procedures for the products at issue in this rulemaking would require amendment to account for standby mode and off mode energy use as required by EISA 2007. Specifically, the test procedure for vented heaters would need added measurement and calculation provisions to integrate electrical standby mode and off mode energy use into the overall energy consumption equations. Fossil-fuel standby mode and off mode energy use is already integrated into the vented

² IEC standards are available for purchase at: <http://www.iec.ch>.

heater test procedure (see section III.B.1 below). Test procedures for unvented heaters would need added measurement provisions of standby power (fossil-fuel and electrical). However, for the reasons explained in section III.C below, no added calculations or new energy efficiency descriptors are offered in today's proposal for unvented heaters. Pool heater test procedures would need added measurement and calculation provisions for both electric and fossil-fuel standby mode and off mode energy use. Such energy use would need to be incorporated into both the overall energy consumption equations. As noted above, the test procedures for residential water heaters would not need amendment, because standby mode energy use is fully integrated into the existing test procedure, and off mode is not applicable for residential water heaters.

In amending the current test procedures for residential direct heating equipment and pool heaters, DOE proposes to incorporate by reference IEC Standard 62301, "Household electrical appliances—measurement of standby power" (First Edition, 2005–06), regarding test conditions and test procedures for measuring standby mode and off mode energy consumption. DOE also proposes to incorporate product-specific definitions of "active mode," "standby mode," and "off mode" that are consistent with the guidance set forth under 42 U.S.C. 6295(gg)(1)(A). Further, DOE proposes to include in each test procedure additional language that would clarify the application of IEC Standard 62301 for measuring standby mode and off mode power consumption.³

III. Discussion

A. Determination Not To Amend Test Procedures for Residential Water Heaters

As noted above, DOE's test procedures for residential water heaters are found at 10 CFR 430.23(e) and 10 CFR part 430, subpart B, appendix E. These test procedures include provisions for determining the energy factor (EF) as well as the annual energy consumption of those products. As written, the test procedures include a full year accounting of energy use, both

electricity and fossil fuel as applicable to a given unit. The following explains generally how water heater energy consumption is determined under the DOE test procedure. Specific measurements are required to determine the water heater's energy performance in providing a representative daily amount of hot water. The measurements are used to calculate two separate performance metrics: (1) Recovery efficiency, and (2) standby loss. Further calculations provide for a comprehensive efficiency descriptor (EF) which represents the overall efficiency of the water heater in providing the representative daily amount of hot water. Annual energy consumption and cost are estimated by extending this daily performance measured by EF to a full year (*i.e.*, 365 days).

There are some non-substantive differences in terms of the terminology used in the existing residential water heater test procedures as compared to what is used in EISA 2007. For example, the test procedure's standby loss is expressed as either an hourly standby loss or a heat loss coefficient, and while not identical, it can be equated to EISA 2007's "standby mode" energy use. In addition, the EISA 2007 definition of "off mode" appears inapposite to water heater operation. Water heaters are assumed to operate all year either actively heating water or incurring energy consumption (loss) in standby mode. There is no other mode of energy consumption conceivable for these products. Accordingly, to the extent those terms apply, DOE believes the full-year accounting of energy use as currently presented in the DOE water heater test procedure fully accounts for measurement of active mode, standby mode, and off mode energy consumption, as required by EISA 2007. Similarly, the water heater test procedure's efficiency descriptor Energy Factor is a complete accounting of all energy consumption possible for a residential water heater.

In consideration of the above, DOE has tentatively concluded that the current test procedures for water heaters already fully account for and incorporate measurement of standby mode and off mode energy consumption, as required by EISA 2007. (42 U.S.C. 6295(gg)(2)(A)(i))

B. Proposed Test Procedure Amendments for Vented Heaters

As discussed above, EISA 2007 requires amendment of DOE's test procedures for direct heating equipment to account for standby mode and off mode energy consumption. This section

discusses amendments for the test procedure provisions for vented heaters, and section III.C addresses test procedure amendments for unvented heaters. Specifically, the vented heater test procedures require additional measurement and calculation provisions in order to account for electrical standby mode and off mode energy use. Fossil-fuel standby mode and off mode energy use is already integrated into the vented heater test procedure.⁴

As a first step in addressing the requirements of EISA 2007, DOE believes the relevant terms and concepts from that statute need clarification as they apply to vented heaters. While EISA 2007 provided definitions and concepts that are generally applicable and workable within the context of the existing vented heater test procedure, some clarifying language is necessary to address the specific characteristics of the products relevant to this rulemaking. The following paragraphs discuss these proposed clarifications.

Section 310(3) of EISA 2007 defines "active mode" as "* * * the condition in which an energy-using product—(I) is connected to a main power source; (II) has been activated; and (III) provides 1 or more main functions." (42 U.S.C. 6295(gg)(1)(A)(i)) This statutory definition of "active mode" is comparable to what is referred to as "on-cycle" in the current vented heater test procedures. 10 CFR part 430, subpart B, appendix O, section 4.0 *Calculations*. On-cycle is the period during the heating season when the vented heater is performing its main function (*i.e.*, heat delivery). The heat delivery process begins with the activation of the burner followed by, or simultaneously with, the activation of circulating fans, and ends with the deactivation of these components. As discussed in section III.B.3 below, the duration of on-cycle can be estimated in the test procedure as burner operating hours (BOH).

Section 310(3) of EISA 2007 defines "standby mode" as "* * * the condition in which an energy-using product—(I) is connected to a main power source; and (II) offers 1 or more of the following user oriented or protective functions: (aa) To facilitate the activation or deactivation of other functions (including active mode) by remote switch (including remote control), internal sensor, or timer; (bb) Continuous functions, including information or status displays (including clocks) or sensor-based functions." (42 U.S.C.

³ EISA 2007 directs DOE to also consider IEC Standard 62087 when amending its test procedure to include standby mode and off mode energy consumption. See 42 U.S.C. 6295(gg)(2)(A). However, IEC Standard 62087 addresses the methods of measuring the power consumption of audio, video, and related equipment. As explained subsequently in this notice, the narrow scope of this particular IEC Standard reduces its relevance to today's proposal.

⁴ Vented heaters can be fueled by natural gas, propane, or oil. For simplicity, the expressions "fossil-fueled" or "fossil-fuel" will be used to include all three fuel types.

6295(gg)(1)(A)(iii) The statutory definition of “standby mode” is comparable to what is referred to as “off-cycle” in the current vented heater test procedure. 10 CFR part 430, subpart B, appendix O, section 4.0 *Calculations*. The duration of off-cycle would be the total time during the heating season when the vented heater is connected to power sources and not in active mode.

Section 310(3) of EISA 2007 defines “off mode” as “* * * the condition in which an energy-using product—(I) is connected to a main power source; and (II) is not providing any standby or active mode function.” (42 U.S.C. 6295(gg)(1)(A)(ii) For vented heaters, off mode would occur during the non-heating season when the vented heater is connected to power sources but is not activated to provide heat. The statutory definition of “off mode” is comparable to what is referred to as non-heating season in the current vented heaters test procedure. The proposed definitions are located in 10 CFR part 430, subpart B, appendix O, section 4.0 *Calculations*.

DOE believes these proposed definitions provide the clarification necessary to carry out the requirements of EISA 2007 without unduly complicating matters by addressing the potential for minor inaccuracies, such as those that might be caused by slight differences in run times for burners and air circulating fans (see section III.B.3 below). DOE requests comments on this approach for characterizing the active mode, standby mode, and off mode operation of vented heaters.

1. Treatment of Fossil-Fuel Consumption in Existing Test Procedures for Fossil-Fueled Vented Heaters

DOE has tentatively concluded that the existing test procedures for vented heaters already fully account for and integrate standby mode and off mode fossil fuel energy consumption.⁵ Underlying the basis for this conclusion is the manner in which gas consumption is accounted for in two of the test procedure’s efficiency metrics, the part-load fuel utilization efficiency and the Annual Fuel Utilization Efficiency (AFUE).

The existing test procedure for vented heaters is a flue loss procedure which, accordingly, requires measurement of

temperatures and percent concentrations of carbon dioxide (CO₂) in the flue. The fossil fuel and electric input is measured within a tolerance of the nameplate input.⁶ For units equipped with a constant-burning pilot light, a separate measurement of energy input to the pilot light is required. An exception to the pilot light measurement requirement is granted to manually-controlled heaters where the pilot light is designed to be turned off by the user when the heater is not in use and where the unit is labeled with instructions to do so.

From this relatively limited set of data, on-cycle and off-cycle losses are determined using empirical coefficients and a suite of calculations that address various design features such as manual and modulating controls. Direct measurement of draft coefficients for units that are installed with thermal stack dampers is required. At the manufacturer’s discretion, this direct measurement procedure is optional for vented heaters without thermal stack dampers. The gas pilot light consumption is present during testing and is, therefore, accounted for in the off-cycle.

The test procedure’s on-cycle and off-cycle provisions are essentially identical in meaning to the EISA 2007 statutory definitions of “active mode” and “standby mode,” respectively. This on-cycle/off-cycle format provides a complete accounting of gas energy use during the entire heating season. In EISA 2007 terminology, gas consumption in both active mode and standby mode is fully accounted for and integrated into the test procedure’s primary efficiency metric, part-load fuel utilization efficiency.

A second efficiency descriptor, AFUE, provides an accounting of the non-heating-season fossil-fuel energy consumption (*i.e.*, pilot light energy consumption). Non-heating season directly relates to the EISA 2007 definition of “off mode.” Accordingly, DOE has tentatively concluded that the AFUE provides a full accounting of fossil-fuel off mode energy consumption pursuant to EISA 2007.

Part-load efficiency is calculated for vented heaters with manual controls and thermal dampers. For all other vented heaters, the calculations produce an AFUE without separately calculating part-load efficiency. Nonetheless, regardless of whether part-load efficiency is separately calculated or

not, AFUE represents a full accounting of annual fossil-fuel consumption (*i.e.*, active mode, standby mode, and off mode) into a single efficiency descriptor.

In addition to the efficiency descriptors discussed above, the vented heater test procedure’s annual energy consumption calculations also represent a complete accounting of fossil-fuel energy consumption.

In sum, the energy efficiency and consumption equations in the existing test procedures for vented heaters provide an entire year’s accounting of fossil-fuel energy consumption (*i.e.*, 8,760 hours),⁷ which includes active mode, standby mode, and off mode energy consumption, as required under EISA 2007. Given that EISA 2007 does not prescribe any time periods over which to measure the energy consumption for all three modes, DOE believes it is reasonable to interpret the Act as permitting the consolidation of active mode, standby mode, and off mode together into an entire year’s accounting.

In consideration of the above, and pursuant to section 310(2)(A)(i) of EISA 2007, DOE has tentatively concluded that the existing test procedures for vented heaters already fully account for and integrate standby mode and off mode fossil-fuel energy consumption.

2. Specific Amendments for Vented Heaters

Some vented heaters have electric auxiliaries. In most cases, the only electric auxiliary associated with vented heaters is the air circulating fan. However, it is conceivable that other auxiliaries, such as power burners and damper controls, could be present, and such devices may have associated electric standby mode and off mode energy consumption. The vented heater test procedure, as written, requires measurement of maximum auxiliary electric power and does not distinguish separate measurements of multiple components. For vented heaters so equipped, this maximum auxiliary electric power measurement would include the total active wattage of multiple auxiliaries. DOE believes this single measurement of maximum active wattage coupled with the estimate of active hours, discussed below in section III.B.3, constitutes a full accounting of what EISA 2007 refers to as active mode electrical consumption. Accordingly, no amendments are offered today to expand the active mode accounting of electrical energy consumption.

⁷ Each year comprises 8,760 hours—*i.e.* (365 days/year) × (24 hours/day) = 8,760 hours/year.

⁵ The only possible fossil fuel standby mode or off mode energy use for vented heaters would be the energy consumption associated with a constant-burning pilot light. Therefore, only gas-fired vented heaters are a part of this discussion, where the term “gas-fired” encompasses both natural gas and propane. Oil-fired vented heaters do not have pilot lights. In the case of electrical energy use, all types of vented heaters may have measurable standby mode and off mode energy use.

⁶ Nameplate input is the energy supply rate in Btus per hour, which is physically listed on the tested vented heater. Testing at this input would be the most appropriate and consistent way to specify a uniform test input rate.

However, since operation of vented heaters with electric auxiliaries may also result in electric energy consumption in standby mode and off mode, and since electric standby mode and off mode are not accounted for, it will be necessary to amend the vented home heating equipment test procedures. First, it is necessary to include a measurement of the standby mode and off mode electrical consumption rate (*i.e.*, wattages). This can be done by adding a new subsection to the vented home heating equipment test procedure. Specifically, separate measurements of standby mode and off mode wattages can be added to section 3.0, Testing and measurements, of 10 CFR part 430, subpart B, appendix O. For these provisions, DOE proposes to reference IEC Standard 62301 for the measurement itself. The added section would require only one measurement of wattage if there is no difference between standby mode and off mode. Separate measurements would be required if a difference is expected. Clarification of the requirement for separate measurements is provided in section III.B.4.

It is further clarified in this added section that the existing test procedure specifications for ambient temperature and voltage shall apply in lieu of the IEC 62301 standard provisions for these parameters. This is done to avoid the possibility of unnecessary burden that might result if the slightly different IEC provisions were required. These parameters have little bearing on the measurement of electrical standby mode and off mode energy consumption as long as they are reasonably uniform during the test. The existing test procedure requires uniform control of these parameters and, thus, should suffice for these added measurements.

A second amendment is needed to specify how to calculate the annual electrical standby mode and off mode energy consumption from the measured wattages. This can be done by adding a new calculation subsection within existing section 4.0, *Calculations*, of 10 CFR part 430, subpart B, appendix O. The new subsection would be designated as 4.7, *Average annual electric standby mode and off mode energy consumption*. This added subsection would assign mode hours consistent with the annual accounting already in the test procedure. Specifically, off mode hours would be assigned the test procedure's value for non-heating season hours. Standby mode hours would be assigned the test procedure's value for heating season hours minus the active mode hours, where active mode hours would be

assigned the test procedure's value for burner operating hours.

No changes to the current regulating quotient, AFUE, are proposed. Therefore, the proposed test procedure amendments related to standby mode and off mode would not impact testing and certification under the existing energy conservation standard (which does not currently address standby mode and off mode energy consumption in a comprehensive manner). DOE considered proposing an integrated AFUE that would incorporate the standby mode and off mode energy consumption into the existing AFUE by adding this additional energy consumption to the active energy consumption within the AFUE quotient. However, DOE has determined that such integration is technically infeasible for vented heaters. This is because the standby mode and off mode energy usage is essentially not measureable due to the fact that most manufacturers' ratings of AFUE (as well as the current energy conservation standards) are presented to the nearest whole number, and the magnitude of the energy for standby mode and off mode would be so comparatively small that it would be unlikely to change the reported value. For example, assuming a representative 4 watts⁸ of standby mode and off mode power might only represent 0.3 percent of the total active energy consumption, and it is expected that in most cases, no change in the reported AFUE would result because of the integration.

DOE's proposed approach would allow for the measurement of standby mode and off mode electrical energy consumption of different vented heater products. Although the magnitude of energy savings may be small for a given unit, it could be substantial when aggregated across the full range of covered products over the 30-year analysis period. DOE plans to further address the standby mode and off mode electrical energy consumption of vented heaters in the next standards rulemaking.

DOE seeks comment on its tentative conclusion that it would be technically infeasible to adopt an integrated AFUE for vented heaters, as well as the

⁸ DOE does not have complete knowledge of the range of expected standby wattages for all types of vented heaters at this time, but it is assumed to be less than the 7-watt average that DOE has determined for central furnaces. This is because vented heaters typically do not have as extensive an array of electrical components and controls as compared to central furnaces. For example, a vented heater may have one small fan as its only electrical component, whereas a central furnace might have a larger circulating fan, electrical power burners, igniters, and considerably more associated electronic controls.

accuracy of the assumptions made regarding the relative magnitude of the standby mode and off mode energy consumption for vented heaters.

3. Active Mode Hours Approximated by Burner Operating Hours for Vented Heaters

As mentioned above in section III.B.2, today's proposal would assign active mode hours of a particular vented heater as its burner operating hours (BOH). BOH is a calculated value in the existing test procedure for gas-fired and oil-fired vented heaters. BOH is determined by estimating the expected annual heating load and deducing the burner on hours necessary to address the annual heating load. BOH is exactly the active mode hours for the burner itself. However, the blower and other electric auxiliaries may have different active mode hours because of intentional time delays and overruns. This possible slight inaccuracy in the active mode hours accounting would be expected to have an insignificant effect on the overall accounting of standby mode and off mode energy consumption, considering the order of magnitude difference between standby mode and off mode hours compared to active mode hours. For example, assuming a representative BOH of 800 hours, the corresponding standby mode and off mode hours would be 7,960 hours (8,760 – 800); accordingly, a one-percent error in BOH would result in a 0.1-percent error in standby mode and off mode accounting. Therefore, considering the complexity and increased burden of expanding the accounting to provide detailed auxiliary run hours with no significant improvement in quantifying the magnitude of standby mode and off mode energy consumption, DOE maintains that assigning active mode hours for all electrical auxiliaries as burner operating hours is both uniform and reasonable.

4. Measurement of Standby Mode and Off Mode Wattages of Vented Heaters

Today's proposed amendments allow for a single wattage (*i.e.*, electrical power) measurement to serve as both standby mode wattage and off mode wattage. DOE has tentatively concluded that this is a reasonable approach when there is expected to be no difference between the two modes in terms of wattage. This would be the case for most vented heater designs where the appliance is not disconnected from the electric power source or where there is an absence of some other condition that would affect standby mode and off mode wattage. The utilization of a seasonal off switch would be a case

where a reduction or elimination of off mode wattage compared to standby mode wattage can be expected. On units so equipped, a separate measurement of off mode wattage would be required, and zero wattage for off mode would be a distinct possibility. Although DOE is not currently aware of some other factor or condition that might affect a difference between standby mode and off mode, a separate measure of off mode wattage would also be required anytime the wattages are expected to differ.

DOE believes the phrases "reduction or elimination" and "seasonal off switch" are unambiguous and clear enough to direct the testing official as to when a separate measurement of off mode wattage is needed. DOE invites comments on the appropriateness and workability of these provisions.

5. Incorporating by Reference IEC Standard 62301 (First Edition 2005–06) for Measuring Standby Mode and Off Mode Energy Consumption for Vented Heaters

As noted previously, EPCA, as amended by EISA 2007, requires that test procedures be amended to include standby mode and off mode energy consumption, taking into consideration the most current versions of Standards 62301 and 62087 of the International Electrotechnical Commission. (42 U.S.C. 6295(gg)(2)(A)) Today's amendments would reference the IEC Standard 62301 to obtain the standby mode and off mode measured wattage. The amended test procedure would use these measured wattages in calculations to accomplish the incorporation of standby mode and off mode energy consumption into the test procedures. DOE reviewed the IEC Standard 62301 and believes it is generally applicable to vented heater testing, although some clarification is needed. Specifically, because there is a possible conflict with provisions of the existing procedures, DOE is clarifying in the proposed standby mode and off mode measurement provisions that the accuracy and precision provisions of the IEC Standard 62301 are to be used in lieu of the existing test procedure accuracy provisions. The issues addressed in the IEC Standard 62301 of supply voltage waveform and power measurement accuracy apply to any measurement of low electrical power, including the low-power measurement for vented heater standby mode and off mode. The existing test procedures' accuracy and measurement provisions will still apply to the measurement of active mode electricity consumption. Further, it is clarified that the existing test procedure's specification of room

ambient temperature and voltage, and not the corresponding specifications of the IEC Standard, will apply for these measurements. The IEC specification of room ambient conditions is slightly more restrictive than those of the existing DOE test procedure. However, DOE has tentatively concluded that there would be no meaningful difference in wattage measurement resulting from the two differing specifications. Overall, IEC Standard 62301 is concise and well organized, and its use should not pose a significant burden to anyone having the ordinary skill and knowledge associated with the vented heater manufacturing and testing industries.

DOE also reviewed IEC Standard 62087, which specifies methods of measuring the power consumption of television (TV) receivers, video cassette recorders (VCRs), set top boxes, audio equipment, and multi-function equipment for consumer use. IEC Standard 62087 does not, however, include measurement for the power consumption of electrical appliances such as vented heaters. Therefore, DOE has tentatively concluded that IEC Standard 62087 is unsuitable for use regarding the proposed amendments to the vented heater test procedures.

C. Proposed Test Procedure Amendments for Unvented Heaters

Consistent with the requirements of EISA 2007, today's proposal also includes test procedure amendments to address the standby mode and off mode energy consumption of unvented heaters. These amendments are less involved, as compared to those for vented heaters. Specifically, to effect the necessary changes for unvented heaters, DOE proposes to add only certain measurement provisions to the existing test procedure. DOE has tentatively concluded that no added or amended calculations to quantify annual standby mode and off mode energy use are necessary. The reasons for this approach are discussed below in detail. DOE believes that its proposed amendments are appropriate for unvented heater products and are consistent with the direction provided in EISA 2007 for both test procedures and standards. (42 U.S.C. 6295(gg)(2) and (3))

By way of background, the unvented heater test procedure is found at 10 CFR 430.23(g) and 10 CFR part 430, subpart B, appendix G. This test procedure applies to the active mode of both electric and fossil-fueled unvented heaters, and it only requires measurement of input energy rate (*e.g.*, Btu's/hour). Output energy rate is simply equated to input energy rate,

because all the input energy is delivered to the heated space as useful heat. This energy rate is converted by mathematical constants to either dollars per million Btu's output and/or annual energy consumption. (Annual energy consumption is calculated only for heaters that are the primary heating source for the entire house. Supplemental heaters only require calculation of dollars per million Btu's.) As currently written, this test procedure generally reflects the lack of any appreciable energy performance difference among models of this product subcategory. This product subcategory has not been subject to any labeling requirements or energy conservation standards, because of the lack of appreciable performance difference as would support regulation. As mentioned above, pursuant to EISA 2007, DOE must now include provisions to measure standby mode and off mode energy use in the test procedures used for these and many other products. This brings up the question of whether unvented heaters use energy in standby mode or off mode and whether this energy consumption might be regulated. DOE anticipates that such test procedure amendments could identify an opportunity for energy performance improvements in unvented heater models, which would in turn require DOE to consider regulating this energy performance.

DOE realizes that this product subcategory presents a unique set of circumstances when addressing the applicable provisions of EISA 2007, particularly the requirement to eventually include standby mode and off mode energy consumption in a future energy conservation standard. First, unlike other test procedures, appendix G does not include energy efficiency or energy use metrics that would allow for the integration of standby mode and off mode energy use. Instead, it merely provides a measure of energy consumption for that unit. As a consequence, there currently exists no basis to establish what EISA 2007 would call a single or integrated standard for the energy efficiency of unvented heaters.

Second, standby mode energy use (defined as energy use during the heating season when the heater is not on) is as effective in heating the space as active mode energy use. Therefore, this energy consumption is not energy waste, but, rather, it is useful output. Accordingly, it may not be beneficial to measure this energy use or appropriate to consider its regulation in an energy conservation standard, unless it is

properly considered as part of the overall system.

Finally, off mode energy consumption (defined as non-heating-season energy consumption) could be considered ineffective energy use and, accordingly, could be minimized by prescribing a separate energy conservation standard. However, defining a representative off mode for this subcategory is difficult because of the lack of data on consumer use. For example, prior to the present rulemaking proceeding, DOE has not been aware of data, or attempted to collect data, on the fraction of the year unvented heaters might be unplugged or otherwise disconnected from the energy source, and the extent to which pilot lights are turned off during the non-heating season.

This unique set of circumstances formed the basis of an inquiry to nine manufacturers of unvented heaters, a number which DOE believes would provide representative input from the affected industry. Specifically, a request for information regarding possible standby mode and off mode energy use for unvented heaters was sent to manufacturers in March 2009. This request for information outlined the issue and asked specific questions designed to aid DOE in addressing the requirements of EISA 2007 for these products. The letter and responses received are available at: http://www1.eere.energy.gov/buildings/appliance_standards/residential/water_pool_heaters_tp_nopr.html.

Basically, all respondents agreed as to the unique set of circumstances for this product type. The respondents reported that standby mode and off mode energy use is present in some designs of unvented heaters. Specifically, fossil-fueled unvented heaters could have constant-burning pilot lights and electric remote controls, both of which would contribute to standby mode and off mode energy use. Similarly, electric heaters could have remote controls that would contribute to off mode energy use. All respondents agreed that it is difficult to define an average representative use cycle for these products, particularly in the off mode. One respondent, the Association of Home Appliance Manufacturers (AHAM), suggested that the off mode be ignored entirely for portable electric heaters, considering the evidence of these units being unplugged when not in use. Specifically, AHAM stated that consumer data, collected by The Stevenson Group for AHAM in 2004, reports that 86 percent of the consumers unplug their portable electric heaters per the safety instructions. (AHAM, No. 2 at pp. 1–2)

In consideration of all of above, DOE believes that the best way to satisfy the EISA 2007 test procedure requirements is to propose additional measurement provisions for standby mode and off mode energy rates without attempting to define an average representative use cycle. The added measurement provisions for pilot lights would be similar those already incorporated in vented heater test procedure. The added measurement provisions for electrical standby mode and off mode energy use rates would be similar to what is proposed today for vented heaters. Both of these added provisions would allow for exemption from measurement if there is means to disconnect the power source when not in use and instructions to do so are clearly visible. This exemption from measurement is identical to what is currently in the existing vented heater test procedures as applied to pilot lights on manually-controlled heaters. DOE believes this exemption from measurement should apply to unvented heaters so equipped.

The proposed approach does not relinquish DOE's authority to regulate unvented direct heating equipment, given the statutory directive to consider amended standards for "direct heating equipment" generally. (42 U.S.C. 6295(e)) The results of the additional measurements provisions could be used to regulate standby mode and off mode energy use for these products.

DOE is interested in receiving comment on its tentative decision not to define a representative use cycle for unvented heaters and the sufficiency of the proposed amendments. DOE is particularly interested in data that might allow for more complete treatment of unvented heaters.

D. Proposed Test Procedure Amendments for Pool Heaters

As indicated above, EISA 2007 requires amendment of the test procedures for pool heaters to account for standby mode and off mode energy consumption. The applicable pool heater test procedure is found at 10 CFR 430.23(p) and 10 CFR part 430, subpart B, appendix P. As explained below, consumption of fossil fuel in the standby mode is already included in the existing test procedure's calculations. However, DOE is proposing to add a specific measurement procedure for fossil-fuel standby mode and off mode energy consumption, because there is currently no protocol for actual measurement of such energy consumption. In addition, measurement and calculation provisions need to be added for off mode fossil-fuel energy consumption. Furthermore, the test

procedures need additional measurement and calculation provisions to integrate electrical standby mode and off mode energy use, as required by EISA 2007. The sections below explain the existing test procedure's requirements for measuring the fossil-fuel and electrical energy consumption of pool heaters, followed by a discussion of DOE's proposed amendments pertaining to the measurement of standby mode and off mode energy consumption for these products.

1. Treatment of Fossil-Fuel Consumption in Existing Test Procedures for Pool Heaters

The existing DOE test procedure for pool heaters is based on a steady-state measure of thermal efficiency in active mode, as specified by ANSI Standard Z21.56–1994, "Gas-Fired Pool Heaters." (It is noted that "thermal efficiency" is specified by statute as the regulating efficiency descriptor. (42 U.S.C. 6291(22)) It is also noted that the current version of this ANSI standard was released in 2006. Upon review, DOE found no substantive differences between the 1994 version and the 2006 version, and accordingly, DOE is proposing to update the incorporation by reference in DOE's regulations at 10 CFR 430.3.) The DOE pool heater test procedure as it now appears in 10 CFR part 430, subpart B, appendix P extends this ANSI procedure by creating a heating seasonal efficiency descriptor (EFFY_{HS}). The heating seasonal efficiency accounts for active and standby modes of fossil-fuel energy consumption, and unlike thermal efficiency, it also accounts for auxiliary electrical energy consumption in the active mode, which is identified in the test procedure as the period of time when the main heating device is energized.

Fossil-fuel energy consumption in the standby mode, which is essentially the pilot light energy consumption (Q_p), is included in the existing test procedure's calculations of heating seasonal efficiency. The term Q_p is currently included in the test procedures' equations without a specified protocol to ascertain the value of Q_p . No default value for Q_p is specified, so it is not clear how this value is obtained. Accordingly, today's proposal would provide a method by which to measure the pilot light energy consumption to help quantify fossil fuel consumption in the standby mode.

The existing test procedures' heating seasonal efficiency includes an accounting of fossil-fuel standby mode that DOE believes is consistent with

EISA 2007 guidance for standby mode. Specifically, standby mode is when the pool heater is connected to the main power source but the heater's main heating device is not functioning. The test procedure establishes that the duration of the standby mode is equivalent to the number of pool operating hours (POH) during the year (4,464 hours) minus the burner operating hours (BOH = 104 hours), where 4,464 and 104 are assigned values already in the existing test procedure. DOE believes this accounting is consistent with EISA 2007 and, accordingly, should remain as the basis of incorporating standby mode. Under today's modified approach, the active mode rate of consumption would be multiplied by the time during which the pool heater is in the active mode, and the standby mode rate of consumption would be multiplied by the time during which the pool heater is in the standby mode.

The existing DOE pool heater test procedure does not account for off mode fossil-fuel energy consumption (*i.e.*, the amount of energy used when the pool heater is not in service). Off mode operation would occur outside the pool heating season that is currently described in the test procedure by the average number of pool operating hours during the year, which is defined as 4,464 h per year throughout the country. The pilot light energy consumption during this period would be an example of off mode fossil-fuel energy consumption. Under the modified approach, DOE proposes to now include off mode fossil-fuel energy consumption measurement provisions and to incorporate the results into the test procedures' energy usage and efficiency equations. Again, under today's modified approach, the off mode rate of consumption would be multiplied by the time during which the pool heater is in the off mode. However, for pool heaters with a seasonal off switch, off mode fossil-fuel energy consumption would be assigned a value of zero.

2. Treatment of Electricity Consumption in Existing Test Procedures for Pool Heaters

As mentioned in section III.D.1, the electricity consumption during active mode is incorporated in the heating seasonal efficiency descriptor, but electricity consumption during the standby mode or off mode is not considered in the existing DOE pool heater test procedure. Under the modified approach, DOE proposes to introduce standby mode and off mode electrical energy consumption measurement provisions and to

incorporate the results into the test procedures' energy usage and efficiency equations. However, for pool heaters with a seasonal off switch, off mode electrical energy consumption would be assigned a value of zero.

3. Measurement of Standby Energy Consumption in ANSI/ASHRAE Standard 146–2006

ANSI/ASHRAE Standard 146–2006, "Method of Testing and Rating Pool Heaters," extends the procedure specified by ANSI Standard Z21.56 by including a test in which the energy consumption in standby mode is measured. During this 60-minute standby test, the thermostat setting for the pool heater is set low enough so that the pool heater does not enter active mode during the test. The total electricity and natural gas energy consumption is measured over this 60-minute period and added to provide a metric for standby mode energy consumption. Today's NOPR proposes to adopt a similar approach to measure standby mode and off mode energy consumption. DOE believes that ANSI/ASHRAE 146–2006 cannot be adopted "as-is" because there are some terminology differences specific to implementation of the requirements of EISA 2007. For example, there is no measurement or definition of "off mode" in ANSI/ASHRAE 146–2006.

4. Specific Amendments for Pool Heaters

The proposed amendments to appendix P would modify the existing test procedure by adding a standby mode energy consumption measurement that is similar to that used in the ASHRAE Standard 146, "Method of Testing for Rating Pool Heaters," but that is tailored to address the specific concepts of EISA 2007. Specifically, a definition section would be added to the test procedure to clarify the EISA 2007 definitions of "active mode," "standby mode," and "off mode," as applied to pool heaters. Separate measurement and calculation provisions would be added to allow separate quantification of standby mode and off mode energy consumption. A new efficiency descriptor, integrated thermal efficiency, would replace the heating seasonal efficiency to allow for integration of standby mode and off mode energy consumption into a single efficiency measure. The term "integrated thermal efficiency" is used to maintain consistency with the statute. This approach would allow for the integration and incorporation of standby mode and off mode energy consumption into both the test procedure and an

energy conservation standard, as called for in 42 U.S.C. 6295(gg)(2)(A) and 42 U.S.C. 6295(gg)(3) respectively. The thermal efficiency descriptor will remain in the test procedure to provide the regulating basis for the current energy conservation standard.

Unlike the integrated AFUE for vented heaters discussed above, DOE has tentatively concluded that the integrated thermal efficiency is technically feasible and would provide measurable performance differentiation, because the added standby mode and off mode energy consumption is significant relative to the active energy consumption of the original thermal efficiency. There are two contributing factors to this conclusion: (1) The added energy consumption includes both fossil fuel and electrical energy consumption, and (2) the active energy consumption is relatively smaller because of the smaller number of active mode hours for pool heaters as compared to vented heaters. As a result, the pilot light alone would be expected to have the effect of reducing the thermal efficiency by a few percentage points.

Additionally, the proposed amendments to appendix P would update the references to ANSI Standard Z21.56–2006, the most recent version of that standard. As noted above, DOE has compared this version with the currently-referenced version from 1994 and found no substantive differences between the two test methods.

5. Incorporating by Reference IEC Standard 62301 (First Edition 2005–06) for Measuring Standby Mode and Off Mode Energy Consumption for Pool Heaters

As noted previously, EPCA, as amended by EISA 2007, requires that DOE test procedures be amended to include standby mode and off mode energy consumption, taking into consideration the most current versions of Standards 62301 and 62087 of the International Electrotechnical Commission. (42 U.S.C. 6295(gg)(2)(A)) Today's amendments to the pool heater test procedure would incorporate by reference IEC Standard 62301 to obtain the standby mode and off mode measured wattage. Today's proposed test procedure amendments would use these measured wattages in calculations to accomplish the incorporation of standby mode and off mode energy consumption into the test procedures.

DOE is proposing the following clarifications to avoid any conflicts between the existing test procedure and IEC Standard 62301. First, DOE proposes to clarify that the room ambient temperature and voltage

specifications of the existing test procedure would suffice to carry out the new wattage measurements and should continue to be used rather than the corresponding specifications of room ambient temperature and voltage in IEC Standard 62301. DOE has tentatively concluded that there would be no meaningful difference in the wattage measurement resulting from the slightly differing specifications for room ambient temperature and voltage. Second, DOE would clarify that the accuracy and measurement provisions of IEC Standard 62301 are appropriate for these measurements and would supersede the corresponding provisions of the existing test procedure. DOE believes the issues addressed in section 5 of IEC Standard 62301, related to supply voltage waveform and power measurement accuracy, would apply to any measurement of low electrical power, including the low-power measurement for pool heater standby mode and off mode. The existing test procedure's accuracy and measurement provisions will still apply to the measurement of active mode electricity consumption. In general, DOE believes IEC Standard 62301 is concise and well organized and would not impose a significant burden, given the considerable skill and knowledge base present in the pool heater manufacturing and associated testing industries.

DOE also reviewed IEC Standard 62087, which specifies methods of measuring the power consumption of TV receivers, VCRs, set top boxes, audio equipment, and multi-function equipment for consumer use. IEC Standard 62087 does not, however, include measurement for the power consumption of electrical appliances such as pool heaters. Therefore, DOE has tentatively concluded that IEC Standard 62087 is unsuitable for use regarding the proposed amendments to the pool heater test procedures.

IV. Procedural Issues and Regulatory Review

A. Review Under Executive Order 12866

Today's proposed rule is not a "significant regulatory action" under section 3(f) of Executive Order 12866, "Regulatory Planning and Review," 58 FR 51735 (Oct. 4, 1993). Accordingly, this proposed action was not subject to review under the Executive Order by the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget (OMB).

B. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of an initial regulatory flexibility analysis for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, would 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's procedures and policies may be viewed on the Office of the General Counsel's Web site (<http://www.gc.doe.gov>).

DOE reviewed today's proposed rule under the provisions of the Regulatory Flexibility Act and the procedures and policies published on February 19, 2003. This proposed rule would prescribe test procedure amendments that would be used to determine compliance with energy conservation standards for the products that are the subject of this rulemaking. Although DOE considers test procedure amendments for residential water heaters, direct heating equipment, and pool heaters in this rulemaking, DOE proposes amendments to the test procedures for pool heaters and direct heating equipment only. For the reasons stated earlier in the preamble, DOE has tentatively determined that amendments to the test procedure for water heaters are not necessary.

The Small Business Administration (SBA) considers an 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. The threshold values set forth in these regulations use size standards and codes established by the North American Industry Classification System (NAICS) that are available at http://www.sba.gov/idc/groups/public/documents/sba_homepage/serv_sstd_tablepdf.pdf. The threshold number designation as a small business under NAICS classification 333414, titled "Heating Equipment (Except Warm Air Furnaces) Manufacturing," is 500 employees. This classification specifically includes manufacturers of direct heating equipment and pool heaters.

Concurrent to this rulemaking for test procedures, DOE has been in the process of developing amended energy conservation standards for the products

covered in this rulemaking. On December 11, 2009, DOE published a Notice of Proposed Rulemaking and Public Meeting for Energy Conservation Standards for Residential Water Heaters, Direct Heating Equipment, and Pool Heaters in the **Federal Register**. 74 FR 65852. This notice inaccurately stated that the applicable NAICS classification number for pool heaters is 335228. As these rulemakings apply to the same sets of products, the DOE believes clarification is both necessary and appropriate. Additionally, DOE has included a similar notification regarding the correct NAICS classification number in the context of the final rule for Energy Conservation Standards for Residential Water Heaters, Direct Heating Equipment, and Pool Heaters. The standards final rule was issued on March 31, 2010 and was published in the **Federal Register** on April 16, 2010. 75 FR 20112.

In the December 11, 2009 NOPR for energy conservation standards, DOE identified 12 small DHE manufacturers and one small pool heater manufacturer that can be considered small businesses. Pool heater manufacturers and the vented heater manufacturers of the DHE product class are the same as identified in the standards notice. An estimate of the number of manufacturers of unvented heaters was not developed as part of the standards analysis because, for reasons stated in the 2009 NOPR, DOE believes it is unnecessary to set minimum efficiency standards for unvented DHE. 74 FR 65852, 65866 (Dec. 11, 2009). Based on its interviews with manufacturers, DOE has tentatively determined that there are three unvented DHE manufacturers considered small businesses.

For the reasons explained below, DOE has tentatively concluded that the proposed rule would not have a significant impact on either small or large manufacturers under the applicable provisions of the Regulatory Flexibility Act. The proposed rule would amend DOE's test procedures for direct heating equipment and pool heaters by incorporating testing provisions to address standby mode and off mode energy consumption. The proposed procedures involve measuring power input when the direct heating equipment or pool heater is in standby mode and off mode during testing. Pool heater proposed test procedure amendments would require measurement of both fossil fuel and electric energy use in standby mode and off mode. DHE proposed test procedure amendments would require measurement of only electrical energy use in standby mode and off mode.

These tests can be conducted in the same facilities used for the current energy testing of these products, so there would be no additional facilities costs required by the proposed rule. In addition, while the power meter proposed to be required for these tests might require greater accuracy than the power meter used for current energy testing, the investment required for a possible instrumentation upgrade would be modest. It is likely that the manufacturers, or their testing facilities, already have equipment that meets the requirements of IEC 62301, but an Internet search of equipment that specifically meets the requirements of IEC 62301 reveals a cost of approximately \$2,700 to \$3,000. This cost is small compared to the overall financial investment needed to undertake the business enterprise of testing consumer products which involves facilities, qualified staff, and specialized equipment.

The duration of the electrical standby mode and off mode testing for DHE is also short, approximately five minutes if the power supply is stable and ten minutes if the power supply is not stable. For example, testing with unstable power supply might require five minutes to determine that it is in fact unstable followed by an additional integrated test measurement of five minutes. The duration of the fossil fuel and electrical standby mode and off mode test proposed for pool heaters is one hour. This one hour time period is consistent with the industry consensus for such measurement (*i.e.*, the ASHRAE Standard 146), and, is not a significant extension of the DOE existing test procedures. The existing DOE test procedure requires, in addition to set-up, an establishment of steady state conditions that might approach 2 hours followed by the actual thermal efficiency test for 30 minutes. The proposed standby test could begin immediately following the thermal efficiency test and therefore, would not require additional set up, instrumentation, or waiting period. The testing official could run simultaneous tests on other units and simply record the results of the test at the end of the 60 minute standby period. For these reasons, DOE believes that the proposed requirements for equipment and time to conduct the additional tests would not be expected to impose a significant economic impact on affected entities, regardless of size.

Accordingly, DOE tentatively concludes and certifies that this proposed rule would not have a significant economic impact on a substantial number of small entities.

Accordingly, DOE has not prepared a regulatory flexibility analysis for this rulemaking. DOE will provide its certification and supporting statement of factual basis to the Chief Counsel for Advocacy of the SBA for review under 5 U.S.C. 605(b).

C. Review Under the Paperwork Reduction Act of 1995

This rule contains a collection-of-information requirement subject to the Paperwork Reduction Act (PRA) which has been approved by OMB under control number 1910-1400. Public reporting burden for compliance reporting for energy and water conservation standards is estimated to average 30 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. Send comments regarding this burden estimate, or any other aspect of this data collection, including suggestions for reducing the burden, to DOE (see **ADDRESSES**) and by e-mail to [Christine J. Kymn@omb.eop.gov](mailto:Christine.J.Kymn@omb.eop.gov).

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

D. Review Under the National Environmental Policy Act of 1969

In this rulemaking, DOE is proposing test procedure amendments that it expects would be used to develop and implement future energy conservation standards for residential direct heating equipment and pool heaters. DOE has determined that this rule falls into a class of actions that are categorically excluded from review under the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*) and DOE's implementing regulations at 10 CFR part 1021. Specifically, this proposed rule would amend the existing test procedures for these products without changing their environmental effects, and, therefore, it is covered by Categorical Exclusion A5 in 10 CFR part 1021, subpart D, which applies because this rule would establish revisions to existing test procedures that would not affect the amount, quality, or distribution of energy usage, and, therefore, would not result in any environmental impacts. Accordingly, neither an environmental assessment nor an environmental impact statement is required.

E. Review Under Executive Order 13132

Executive Order 13132, "Federalism," imposes certain requirements on agencies formulating and implementing policies or regulations that preempt State law or that have Federalism implications. 64 FR 43255 (August 10, 1999). The Executive Order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States, and to carefully assess the necessity for such actions. The Executive Order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have Federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process that it will follow in developing such regulations. 65 FR 13735. DOE has examined this proposed rule and determined that it would 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 today's proposed 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)) Therefore, Executive Order 13132 requires no further action.

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 clearly specifies the following: (1) The preemptive effect, if any; (2) any effect on existing Federal law or regulation; (3) a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) the retroactive effect, if any; (5) definitions of key terms; and

(6) 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 whether 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 proposed 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) (Pub. L. 104-4; 2 U.S.C. 1501 *et seq.*) requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. For a proposed regulatory action likely to result 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 estimates of the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a),(b)) 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 such governments. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. (The policy is also available at <http://www.gc.doe.gov>). Today’s proposed rule contains neither an intergovernmental mandate nor a mandate that may result in an 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. Today’s proposed rule would 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

Pursuant to Executive Order 12630, “Governmental Actions and Interference with Constitutionally Protected Property Rights,” 53 FR 8859 (March 15, 1988), DOE has determined that this proposed regulation would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

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

Section 515 of the Treasury and General Government Appropriations Act, 2001 (Pub. L. 106-554; 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). DOE has reviewed today’s notice under 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 proposed significant energy action. A “significant energy action” is defined as any action by an agency that promulgates 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 proposed significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use. Today’s proposed regulatory action to amend the test procedures for residential direct heating equipment and pool heaters to address standby mode and off mode energy use is not a significant regulatory action

under Executive Order 12866. It has likewise not been designated as a significant energy action by the Administrator of OIRA. Moreover, it would not have a significant adverse effect on the supply, distribution, or use of energy. 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 DOE Organization Act (Pub. L. 95-91; 42 U.S.C. 7101 *et seq.*), 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 (FEAA). (15 U.S.C. 788) Section 32 essentially provides in relevant part that, where a proposed rule authorizes or requires use of commercial standards, the 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 proposed modifications to the test procedures addressed by this proposed rule incorporate testing methods contained in the commercial standards, the International Electrotechnical Commission (IEC) Standard 62301, “Household electrical appliances—Measurement of standby power,” Publication 62301 First Edition 2005-06 and “American National Standards Institute (ANSI) Standard Z21.56-2006, “Gas-Fired Pool Heaters.” 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 it was developed in a manner that fully provides for public participation, comment, and review). DOE will consult with the Attorney General and the Chairman of the FTC about the impact of these test procedures on competition, before prescribing a final rule.

V. Public Participation

A. Attendance at the Public Meeting

The time, date, and location of the public meeting are listed in the **DATES** and **ADDRESSES** sections at the beginning of this NOPR. To attend the public meeting, please notify Ms. Brenda Edwards at (202) 586-2945. As explained in the **ADDRESSES** section,

foreign nationals visiting DOE Headquarters are subject to advance security screening procedures.

B. Procedure for Submitting Requests to Speak

Any person who has an interest in the topics addressed in this notice, or who is a representative of a group or class of persons that has an interest in these issues, may request an opportunity to make an oral presentation at the public meeting. Such persons may hand-deliver requests to speak to the address shown in the **ADDRESSES** section at the beginning of this notice between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays. Requests may also be sent by mail or e-mail to: Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, Mailstop EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121, or Brenda.Edwards@ee.doe.gov. Persons who wish to speak should include with their request a computer diskette or CD-ROM in WordPerfect, Microsoft Word, PDF, or text (ASCII) file format that briefly describes the nature of their interest in this rulemaking and the topics they wish to discuss. Such persons should also provide a daytime telephone number where they can be reached.

DOE requests persons scheduled to make an oral presentation to submit an advance copy of their statements at least one week before the public meeting. DOE may permit persons who cannot supply an advance copy of their statement to participate, if those persons have made advance alternative arrangements with the Building Technologies Program. As necessary, requests to give an oral presentation should ask for such alternative arrangements.

C. Conduct of Public Meeting

DOE will designate a DOE official to preside at the public meeting and may also use a professional facilitator to aid discussion. The meeting will not be a judicial or evidentiary-type public hearing, but DOE will conduct it in accordance with section 336 of EPCA (42 U.S.C. 6306). There shall not be discussion of proprietary information, costs or prices, market share, or other commercial matters regulated by U.S. anti-trust laws. A court reporter will be present to record the proceedings and prepare a transcript.

The public meeting will be conducted in an informal, conference style. DOE reserves the right to schedule the order of presentations and to establish the procedures governing the conduct of the public meeting. DOE will present

summaries of comments received before the public meeting, allow time for presentations by participants, and encourage all interested parties to share their views on issues affecting this rulemaking. Each participant will be allowed to make a prepared general statement (within time limits determined by DOE), before the discussion of specific topics. DOE will permit other participants to comment briefly on any general statements. At the end of all prepared statements on each specific topic, DOE will permit participants to clarify their statements briefly and to comment on statements made by others.

Participants should be prepared to answer DOE's and other participants' questions. DOE representatives may also ask participants about other matters relevant to this rulemaking. The official conducting the public meeting will accept additional comments or questions from those attending, as time permits. The presiding official will announce any further procedural rules or modification of the above procedures needed for the proper conduct of the public meeting. After the public meeting, interested parties may submit further comments on the proceedings as well as on any aspect of the rulemaking until the end of the comment period.

DOE will make the entire record of this proposed rulemaking, including the transcript from the public meeting, available for inspection at the U.S. Department of Energy, 6th Floor, 950 L'Enfant Plaza, SW., Washington, DC 20024, (202) 586-2945, between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays. Copies of the transcript will be posted on the DOE Web site and are also available for purchase from the transcribing reporter.

D. Submission of Comments

DOE will accept comments, data, and information regarding the proposed rule before or after the public meeting, but no later than November 15, 2010. Comments, data, and information submitted to DOE's e-mail address for this rulemaking should be provided in WordPerfect, Microsoft Word, PDF, or text (ASCII) file format. Stakeholders should avoid the use of special characters or any form of encryption, and wherever possible, comments should include the electronic signature of the author. Comments, data, and information submitted to DOE via mail or hand delivery/courier should include one signed paper original. No telefacsimiles (faxes) will be accepted.

Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and

exempt by law from public disclosure should submit two copies: One copy of the document that includes all of the information believed to be confidential, and one copy of the document with that information deleted. DOE will make its own determination as to the confidential status of the information and treat it accordingly.

Factors of interest to DOE when evaluating requests to treat submitted information as confidential include: (1) A description of the items; (2) whether and why such items are customarily treated as confidential within the industry; (3) whether the information is generally known by or available from other sources; (4) whether the information was previously made available to others without obligation concerning its confidentiality; (5) an explanation of the competitive injury to the submitting person that would result from public disclosure; (6) when such information might lose its confidential nature due to the passage of time; and (7) why disclosure of the information would be contrary to the public interest.

E. Issues on Which DOE Seeks Comment

Although comments are welcome on all aspects of this rulemaking, DOE is particularly interested in receiving comments and views of interested parties on the following issues:

1. *Incorporation of IEC Standard 62301.* DOE invites comment on the adequacy of IEC Standard 62301 to measure standby mode and off mode power for vented heaters, unvented heaters, and pool heaters.

2. *No Need to Amend Water Heater Test Procedures.* DOE invites comment on its tentative conclusion that the current test procedures for water heaters already fully account for and incorporate measurement of standby mode and off mode energy consumption, as required by EISA 2007.

3. *Updated Reference for Pool Heater Testing.* DOE invites comment on the updated version of American National Standards Institute (ANSI) Standard Z21.56-2006, "Gas-Fired Pool Heaters," and whether it constitutes any substantive change relative to the 1994 version of ANSI Standard Z21.56 currently referenced in the existing test procedure.

4. *Integrated AFUE for Vented Heaters.* DOE seeks comment on its tentative conclusion that it would be technically infeasible to adopt an integrated AFUE for vented heaters, as well as the accuracy of the assumptions made regarding the relative magnitude of the standby mode and off mode energy consumption for vented heaters.

5. *Integrated Thermal Efficiency for Pool Heaters*. DOE seeks comment on the proposed efficiency descriptor, integrated thermal efficiency, that would allow for integration of standby mode and off mode energy consumption into a single efficiency measure, and whether this approach would allow for the integration and incorporation into the test procedure and an energy conservation standard, as called for in 42 U.S.C. 6295(gg)(2)(A) and 42 U.S.C. 6295(gg)(3) respectively.

VI. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this notice of proposed rulemaking.

List of Subjects in 10 CFR Part 430

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Incorporation by reference, Intergovernmental relations, Small businesses.

Issued in Washington, DC, on August 20, 2010.

Cathy Zoi,

Assistant Secretary, Energy Efficiency and Renewable Energy.

For the reasons stated in the preamble, DOE is proposing to amend part 430 of chapter II, subchapter D of title 10 of the Code of Federal Regulations, to read as set forth below:

PART 430—ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

1. The authority citation for part 430 continues to read as follows:

Authority: 42 U.S.C. 6291–6309; 28 U.S.C. 2461 note.

2. Section 430.3 is amended by revising paragraph (c)(13) to read as follows:

§ 430.3 Materials incorporated by reference.

* * * * *

(c) * * *

(13) ANSI Z21.56–2006 (“ANSI Z21.56”), Standard for Gas-Fired Pool Heaters, approved December 13, 2005, IBR approved for Appendix P to Subpart B.

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§ 430.23 [Amended]

3. Section 430.23 is amended by:
 a. Removing the words “section 4.2 of appendix P” in paragraph (p)(1)(i) and adding in their place “section 5.2 of appendix P”, and

b. Removing the words “section 4.3 of appendix P” in paragraph (p)(1)(ii) and adding in their place “section 5.3 of appendix P”.

Appendix G to Subpart B—[Amended]

4. Appendix G to Subpart B of Part 430 is amended in section 2 by adding new sections 2.3, 2.3.1, 2.4, and 2.4.1 to read as follows:

Appendix G to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Unvented Home Heating Equipment

* * * * *

2. *Testing and measurements.*

* * * * *

2.3 *Pilot light measurement.* Except as provided in section 2.3.1, measure the energy input rate to the pilot light (Q_p), with an error no greater than 3 percent, for unvented heaters so equipped.

2.3.1 The measurement of Q_p is not required for unvented heaters where the pilot light is designed to be turned off by the user when the heater is not in use (*i.e.*, for units where turning the control to the OFF position will shut off the gas supply to the burner(s) and the pilot light). This provision applies only if an instruction to turn off the unit is provided on the heater near the gas control valve (*e.g.*, by label) by the manufacturer.

2.4 *Electrical standby mode power measurement.* Except as provided in section 2.4.1, for all electric heaters and unvented heaters with electrical auxiliaries, measure the standby power (P_{SB}) in accordance with the procedures in the International Electrotechnical Commission (IEC) Standard 62301, “Household electrical appliances—Measurement of standby power,” Publication 62301 First Edition 2005–06 (incorporated by reference; see § 430.3), with all electrical components not activated. Voltage shall be as specified in section 1.4.1 *Electrical supply* of this appendix.

2.4.1 The measurement of P_{SB} is not required for heaters designed to be turned off by the user when the heater is not in use (*i.e.*, for units where turning the control to the OFF position will shut off the electrical supply to the heater). This provision applies only if an instruction to turn off the unit is provided on the heater (*e.g.*, by label) by the manufacturer.

* * * * *

Appendix O to Subpart B—[Amended]

5. Appendix O to Subpart B of Part 430 is amended by:

- a. Adding a Note after the heading;
- b. Redesignating sections 1.1 through 1.33 as follows:

Old sections	New sections
1.1 to 1.14	1.2 to 1.15.
1.15 to 1.19	1.17 to 1.21.
1.20 and 1.21	1.23 and 1.24.
1.22 to 1.25	1.26 to 1.29.
1.26 to 1.33	1.31 to 1.38.

c. Adding new sections 1.1, 1.16, 1.22, 1.25 and 1.30;

d. Adding new sections 3.7, 3.7.1, and 3.7.2; and

e. Revising sections 4.6.3 and 4.6.3.1, and adding a new section 4.7.

The additions and revisions read as follows:

Appendix O to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Vented Home Heating Equipment

Note: The procedures and calculations that refer to standby mode and off mode energy consumption, (*i.e.*, sections 3.7 and 4.7 of this appendix O) need not be performed to determine compliance with energy conservation standards for vented heaters at this time. However, any representation related to standby mode and off mode energy consumption of these products made after [date 180 days after date of publication of the test procedure final rule in the Federal Register] must be based upon results generated under this test procedure, consistent with the requirements of 42 U.S.C. 6293(c)(2). After July 1, 2010, any adopted energy conservation standard shall incorporate standby mode and off mode energy consumption, and upon the compliance date for such standards, compliance with the applicable provisions of this test procedure will also be required.

1.0. *Definitions.*

1.1 “Active mode” means the condition during the heating season in which the vented heater is connected to the power source, and either the burner or any electrical auxiliary is activated.

* * * * *

1.16 “IEC 62301” means the test standard published by the International Electrotechnical Commission, titled “Household electrical appliances—Measurement of standby power,” Publication 62301 First Edition 2005–06. (incorporated by reference; see § 430.3)

* * * * *

1.22 “Off mode” means the condition during the non-heating season in which the vented heater is connected to the power source, and neither the burner nor any electrical auxiliary is activated.

* * * * *

1.25 “Seasonal off switch” means the control device, such as a lever or toggle, on the vented heater that affects a difference in off mode energy consumption as compared to standby mode consumption.

* * * * *

1.30 “Standby mode” means the condition during the heating season in which the vented heater is connected to the power source, and neither the burner nor any electrical auxiliary is activated.

* * * * *

3.0 *Testing and measurements.*

* * * * *

3.7 *Measurement of electrical standby mode and off mode power.*

3.7.1 *Standby power measurements.* With all electrical auxiliaries of the vented heater

not activated, measure the standby power (P_{SB}) in accordance with the procedures in IEC 62301 (incorporated by reference, see § 430.3), except that section 2.9, *Room ambient temperature*, and the voltage provision of section 2.3.5, *Electrical supply*, of this appendix shall apply in lieu of the IEC 62301 corresponding sections 4.2, *Test room*, and 4.3, *Power supply*. Clarifying further, the IEC 62301 sections 4.5, *Power measurement accuracy*, and section 5, *Measurements*, shall apply in lieu of section 2.8, *Energy flow instrumentation*, of this appendix. Measure the wattage so that all possible standby mode wattage for the entire appliance is recorded, not just the standby mode wattage of a single auxiliary.

3.7.2 *Off mode power measurement*. If the unit is equipped with a seasonal off switch or there is an expected difference between off mode power and standby mode power, measure off mode power (P_{OFF}) in accordance with the standby power procedures in IEC 62301 (incorporated by reference, see § 430.3), except that section 2.9, *Room ambient temperature*, and the voltage provision of section 2.3.5, *Electrical supply*, of this appendix shall apply in lieu of the IEC 62301 corresponding sections 4.2, *Test room*, and 4.3, *Power supply*. Clarifying further, the IEC 62301 sections 4.5, *Power measurement accuracy*, and section 5, *Measurements*, shall apply in lieu of section 2.8, *Energy flow instrumentation*, of this appendix. Measure the wattage so that all possible standby mode wattage for the entire appliance is recorded, not just the standby mode wattage of a single auxiliary. If there is no expected difference in off mode power and standby mode power, let $P_{OFF} = P_{SB}$, in which case no separate measurement of off mode power is necessary.

4.0 Calculations.

* * * * *

4.6.3 *Average annual auxiliary electrical energy consumption for vented heaters*. For vented heaters with single stage controls or manual controls, the average annual auxiliary electrical consumption (E_{AE}) is expressed in kilowatt-hours and defined as:

$$E_{AE} = BOH_{SS}P_E + E_{SO}$$

Where:

BOH_{SS} = as defined in 4.6.1 of this appendix

P_E = as defined in 3.1.3 of this appendix

E_{SO} = as defined in 4.7 of this appendix

4.6.3.1 For vented heaters with two stage or modulating controls, E_{AE} is defined as:

$$E_{AE} = (BOH_R + BOH_H)P_E + E_{SO}$$

Where:

BOH_R = as defined in 4.6.1 of this appendix

BOH_H = as defined in 4.6.1 of this appendix

P_E = as defined in 3.1.3 of this appendix

E_{SO} = as defined in 4.7 of this appendix

* * * * *

4.7 *Average annual electric standby mode and off mode energy consumption*.

Calculate the annual electric standby mode and off mode energy consumption, E_{SO} , defined as, in kilowatt-hours:

$$E_{SO} = ((P_{SB} * (4160 - BOH)) + (P_{OFF} * 4600)) * K$$

Where:

P_{SB} = vented heater standby mode power, in watts, as measured in section 3.7

4,160 = average heating season hours per year
 P_{OFF} = vented heater off mode power, in watts, as measured in section 3.7

4,600 = average non-heating season hours per year

K = 0.001 kWh/Wh, conversion factor for watt-hours to kilowatt-hours.

BOH = burner operating hours as calculated in section 4.6.1 where for single stage controls or manual controls vented heaters $BOH = BOH_{SS}$ and for vented heaters equipped with two stage or modulating controls $BOH = (BOH_R + BOH_H)$.

6. Appendix P to Subpart B of Part 430 is revised to read as follows:

Appendix P to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Pool Heaters

Note: The procedures and calculations that refer to standby mode and off mode energy consumption (*i.e.*, sections 2.2, 2.3, 3.2, 4.2, 4.3, 5.3 equation (3), and 5.4 of this appendix P) need not be performed to determine compliance with energy conservation standards for pool heaters at this time. However, any representation related to standby mode and off mode energy consumption of these products made after [date 180 days after date of publication of the test procedure final rule in the **Federal Register**] must be based upon results generated under this test procedure, consistent with the requirements of 42 U.S.C. 6293(c)(2). After July 1, 2010, any adopted energy conservation standard shall incorporate standby mode and off mode energy consumption, and upon the compliance date for such standards, compliance with the applicable provisions of this test procedure will also be required.

1. Definitions.

1.1 *Active mode* means the condition during the pool heating season in which the pool heater is connected to the power source, and the main burner, electric resistance element, or heat pump is activated to heat pool water.

1.2 *IEC 62301* means the test standard published by the International Electrotechnical Commission, titled "Household electrical appliances—Measurement of standby power," Publication 62301 First Edition 2005–06. (incorporated by reference; see § 430.3)

1.3 *Off mode* means the condition during the non-pool heating season in which the pool heater is connected to the power source, and neither the main burner, electric resistance elements, nor heat pump is activated.

1.4 *Seasonal off switch* means a switch present on the pool heater that effects a difference in off mode energy consumption as compared to standby mode energy consumption.

1.5 *Standby mode* means the condition during the pool heating season in which the pool heater is connected to the power source, and neither the main burner, electric resistance elements, nor heat pump is activated.

2. Test Method.

2.1 *Active mode*. The test method for testing pool heaters in active mode is as specified in ANSI Z21.56 (incorporated by reference; see § 430.3).

2.2 *Standby mode*. The test method for testing the energy consumption of pool heaters in standby mode is as described in sections 3 through 5 below.

2.3 Off mode.

2.3.1 *Pool heaters with a seasonal off switch*.

For pool heaters with a seasonal off switch, no off-mode test is required.

2.3.2 *Pool heaters without a seasonal off switch*.

For pool heaters without a seasonal off switch, the test method for testing the energy consumption of the pool heater is as described in sections 3 through 5 below.

3. Test conditions.

3.1 *Active mode*. Establish the test conditions specified in section 2.10 of ANSI Z21.56 (incorporated by reference; see § 430.3).

3.2 Standby mode and off mode.

Following the conclusion of the 30-minute active mode test described in section 3.1, reduce the thermostat setting to a low enough temperature to put the pool heater into standby mode. Reapply the energy sources and operate the pool heater in standby mode for 60 minutes.

4. Measurements.

4.1 *Active mode*. Measure the quantities delineated in section 2.10 of ANSI Z21.56 (incorporated by reference; see § 430.3). The measurement of energy consumption for oil-fired pool heaters in Btu is to be carried out in appropriate units (*e.g.*, gallons).

4.2 *Standby mode*. Record the total electricity consumption during the standby mode test, E_s , in Wh, in accordance with section 5 of IEC 62301 (incorporated by reference; see § 430.3) and the fossil fuel energy consumption during the standby test, Q_p , in Btu. Ambient temperature and voltage specifications of ANSI Z21.56 (incorporated by reference; see § 430.3) shall apply to this standby mode testing.

4.3 Off mode.

4.3.1 *Pool heaters with a seasonal off switch*. For pool heaters with a seasonal off switch, the total electricity consumption during the off mode, $E_{off} = 0$, and the fossil fuel energy consumed during the off mode, $Q_{off} = 0$.

4.3.2 *Pool heaters without a seasonal off switch*. Record the total electricity consumption during the standby/off mode test, $E_{off} (= E_s)$, in Wh, in accordance with section 5 of IEC 62301 (incorporated by reference; see § 430.3), and the fossil fuel energy consumption during the off mode test, $Q_{off} (= Q_p)$, in Btu. Ambient temperature and voltage specifications of ANSI Z21.56 (incorporated by reference; see § 430.3) shall apply to this off mode testing.

5. Calculations.

5.1 *Thermal efficiency*. Calculate the thermal efficiency, E_t (expressed as a percent), as specified in section 2.10 of ANSI Z21.56 (incorporated by reference; see § 430.3). The expression of fuel consumption for oil-fired pool heaters shall be in Btu.

5.2 *Average annual fossil fuel energy for pool heaters*. The average annual fuel energy for pool heaters, E_f , is defined as:

$$E_F = \text{BOH } Q_{\text{IN}} + (\text{POH} - \text{BOH})Q_{\text{PR}} + (8760 - \text{POH}) Q_{\text{off,R}}$$

Where:

BOH = average number of burner operating hours = 104 h

POH = average number of pool operating hours = 4464 h

Q_{IN} = rated fuel energy input as defined according to section 2.10.1 or section 2.10.2 of ANSI Z21.56 (incorporated by reference; see § 430.3), as appropriate.

Q_{PR} = average energy consumption rate of continuously operating pilot light, if employed, = ($Q_{\text{P}}/1 \text{ h}$)

Q_{P} = energy consumption of continuously operating pilot light, if employed, as measured in section 4.2, in Btu

8,760 = number of hours in one year

$Q_{\text{off,R}}$ = average off mode fossil fuel energy consumption rate = $Q_{\text{off}}/(1 \text{ h})$

Q_{off} = off mode energy consumption as defined in section 4.3 of this appendix

5.3 *Average annual auxiliary electrical energy consumption for pool heaters.* The average annual auxiliary electrical energy consumption for pool heaters, E_{AE} , is expressed in Btu and defined as:

$$(1) E_{\text{AE}} = E_{\text{AE,active}} + E_{\text{AE,standby,off}}$$

$$(2) E_{\text{AE,active}} = \text{BOH} * \text{PE}$$

$$(3) E_{\text{AE,standby,off}} = (\text{POH} - \text{BOH}) E_{\text{s,aux}} + (8760 - \text{POH}) E_{\text{off,aux}}$$

Where:

$E_{\text{AE,active}}$ = auxiliary electrical consumption in the active mode

$E_{\text{AE,standby,off}}$ = auxiliary electrical consumption in the standby and off mode

PE = $2E_{\text{c}}$, if heater is tested according to section 2.10.1 of ANSI Z21.56 (incorporated by reference; see § 430.3), in Btu/h

= $3.412 PE_{\text{rated}}$, if heater is tested according to section 2.10.2 of ANSI Z21.56, in Btu/h

E_{c} = electrical consumption of the heater (converted to equivalent unit of Btu), including the electrical energy to the recirculating pump if used, during the 30-minute thermal efficiency test, as defined in section 2.10.1 of ANSI Z21.56, in Btu per 30 min.

2 = conversion factor to convert unit from per 30 min. to per h.

PE_{rated} = nameplate rating of auxiliary electrical equipment of heater, in Watts

BOH = as defined in 5.2 of this appendix

POH = as defined in 5.2 of this appendix

$E_{\text{s,aux}}$ = electrical energy consumption rate during standby mode = $3.412 E_{\text{s}}/(1 \text{ h})$, Btu/h

E_{s} = as defined in 4.2 of this appendix

$E_{\text{off,aux}}$ = electrical energy consumption rate during off mode = $3.412 E_{\text{off}}/(1 \text{ h})$, Btu/h

E_{off} = as defined in 4.3 of this appendix

5.4 Integrated thermal efficiency.

5.4.1 Calculate the seasonal useful output of the pool heater as:

$$E_{\text{OUT}} = \text{BOH}[(E_{\text{t}}/100)(Q_{\text{IN}} + \text{PE})]$$

Where:

BOH = as defined in 5.2 of this appendix

E_{t} = thermal efficiency as defined in 5.1 of this appendix

Q_{IN} = as defined in 5.2 of this appendix

PE = as defined in 5.3 of this appendix

100 = conversion factor, from percent to fraction

5.4.2 Calculate the annual input to the pool heater as:

$$E_{\text{IN}} = E_{\text{F}} + E_{\text{AE}}$$

Where:

E_{F} = as defined in 5.2 of this appendix

E_{AE} = as defined in 5.3 of this appendix

5.4.3 Calculate the pool heater integrated thermal efficiency (TE_{I}) (in percent).

$$TE_{\text{I}} = 100(E_{\text{OUT}}/E_{\text{IN}})$$

Where:

E_{OUT} = as defined in 5.4.1 of this appendix

E_{IN} = as defined in 5.4.2 of this appendix

100 = conversion factor, from fraction to percent

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2008-0107; Directorate Identifier 2007-NM-087-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP Series Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Supplemental notice of proposed rulemaking (NPRM); reopening of comment period.

SUMMARY: We are revising an earlier proposed airworthiness directive (AD) for certain Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes. The original NPRM would have required inspections for scribe lines in affected lap and butt splices, wing-to-body fairings locations, and external repair and cutout reinforcement areas; and related investigative and corrective actions if necessary. The original NPRM resulted from reports of scribe lines found at lap joints and butt joints, around external doublers and antennas, and at locations where external decals had been cut. This action revises the original NPRM by revising certain compliance times including reducing the compliance time for certain repetitive inspections. This supplemental NPRM also proposes to add inspections for certain airplanes. We are proposing this AD to detect and correct scribe lines, which can develop

into fatigue cracks in the skin and cause sudden decompression of the airplane.

DATES: We must receive comments on this supplemental NPRM by September 24, 2010.

ADDRESSES: You may send comments by any of the following methods:

- *Federal eRulemaking Portal:* Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.

- *Fax:* 202-493-2251.

- *Mail:* U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590.

- *Hand Delivery:* U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue, SE., Washington, DC 20590, between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; e-mail me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue, SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (telephone 800-647-5527) is in the **ADDRESSES** section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Nicholas Han, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 917-6449; fax (425) 917-6590.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments