6450-01-P

DEPARTMENT OF ENERGY

10 CFR Part 430

RIN 1904-AE36

Energy Conservation Program: Test Procedures for Cooking Products

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

ACTION: Notice of proposed rulemaking.

SUMMARY: On April 25, 2018, the U.S. Department of Energy (DOE) published a notification of petition from the Association of Home Appliance Manufacturers (AHAM) to withdraw, and immediately stay the effectiveness of, the conventional cooking top test procedure. Based on the review of public comments and data received in response to this petition, DOE proposes to withdraw the test procedure for conventional cooking tops established under the Energy Policy and Conservation Act (EPCA). DOE has tentatively determined that the conventional cooking top test procedure may not accurately represent consumer use for gas cooking tops, may not be repeatable or reproducible for both gas and electric cooking tops, and is overly burdensome to conduct.

DATES: Written comments and information are requested on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN FEDERAL REGISTER]**. DOE will hold a public meeting on this proposed rule. The details for that public meeting will be provided in a subsequent notice published in the *Federal Register*.

ADDRESSES: Interested persons are encouraged to submit comments, identified by "[Test Procedure for Cooking Products]," by any of the following methods:

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

2. *E-mail*: *CookProducts2018TP0004@ee.doe.gov*. Include the docket number EERE–2018–BT–TP-0004 and/or RIN 1904-AE36 in the subject line of the message.

3. *Mail*: Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, Mailstop EE-5B, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. If possible, please submit all items on a compact disc (CD), in which case it is not necessary to include printed copies.

4. *Hand Delivery/Courier*: Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, 950 L'Enfant Plaza, SW., Suite 600, Washington, D.C., 20024. Telephone: (202) 586-6636. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

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

FOR FURTHER INFORMATION CONTACT: Celia Sher, U.S. Department of Energy, Office of the General Counsel, 1000 Independence Avenue, SW., Washington, DC 20585. E-mail: *Celia.Sher@hq.doe.gov*; (202) 287-6122.

SUPPLEMENTARY INFORMATION:

DOE intends to include the following industry standards, previously incorporated by reference into 10 CFR part 430:

(1) International Electrotechnical Commission (IEC) Standard 62301, Household electrical appliances—Measurement of standby power," Publication 62301 (First Edition 2005-06).

(2) IEC 62301 Household electrical appliances—Measurement of standby power, (Edition 2.0 2011-01).

Copies of IEC 62301 (First Edition) and IEC 62301 (Second Edition) can be obtained from the American National Standards Institute, 25 W. 43rd Street, 4th Floor, New York, NY 10036, (212) 642-4900, or go to *http://webstore.ansi.org*.

See Section IV.M. for a further discussion of these standards.

Table of Contents

I. Authority and Background

Kitchen ranges and ovens are included in the list of "covered products" for which DOE is authorized to establish and amend energy conservation standards and test procedures. (42 U.S.C. 6292(a)(10)) DOE's regulations at 10 CFR 430.2 include definitions for "cooking products," which cover cooking appliances that use gas, electricity, or microwave energy as the source of heat; as well as specific types of cooking products, including conventional cooking tops, conventional ovens, microwave ovens, and other cooking products. DOE's energy conservation standards and test procedures for cooking products are currently prescribed at 10 CFR 430.32(j) and 10 CFR 430.23(i), respectively. (Note that DOE does not currently have an energy conservation standard for cooktops.) The following sections discuss DOE's authority to

establish test procedures for cooking products and relevant background information regarding DOE's consideration to withdraw the test procedures for conventional cooking tops.

A. Authority

Title III, Part B[1] of the Energy Policy and Conservation Act of 1975 (EPCA or the Act), Pub. L. 94-163 (42 U.S.C. 6291-6309, as codified), established the Energy Conservation Program for Consumer Products Other Than Automobiles,[2] a program covering most major household appliances, which includes cooking products, and specifically conventional cooking tops,[3] the subject of this NOPR. (42 U.S.C. 6292(a)(10))

Under EPCA, DOE's energy conservation program consists essentially of four parts: (1) Testing, (2) labeling, (3) Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of the Act specifically include definitions (42 U.S.C. 6291), test procedures (42 U.S.C. 6293), labeling provisions (42 U.S.C. 6294), energy conservation standards (42 U.S.C. 6295), and the authority to require information and reports from manufacturers (42 U.S.C. 6296).

The Federal testing requirements consist of test procedures that manufacturers of covered products must use as the basis for: (1) Certifying to DOE that their products comply with the

[1] For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.
[2] All references to EPCA in this document refer to the statute as amended through America's Water Infrastructure Act of 2018, Pub. L. 115–270 (October 23, 2018).
[3] Conventional cooking top means a class of kitchen ranges and ovens which is a household cooking appliance consisting of a horizontal surface containing one or more surface units which include either a gas flame or electric resistance heating. This includes any conventional cooking top component of a combined cooking product. 10 CFR 430.2.

applicable energy conservation standards adopted pursuant to EPCA (42 U.S.C. 6295(s)), and (2) making representations about the efficiency of those consumer products (42 U.S.C. 6293(c)). Similarly, DOE must use these test procedures to determine whether the products comply with relevant standards promulgated under EPCA. (42 U.S.C. 6295(s))

Under 42 U.S.C. 6293, EPCA sets forth the criteria and procedures DOE must follow when prescribing or amending test procedures for covered products. EPCA requires that any test procedures prescribed or amended under this section 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 not be unduly burdensome to conduct. (42 U.S.C. 6293(b)(3)) DOE's test procedures for conventional cooking tops are codified at appendix I to subpart B of title 10 of the CFR part 430 ("appendix I").

B. Background

DOE originally established test procedures for cooking products in a final rule published in the *Federal Register* on May 10, 1978. 43 FR 20108, 20120–20128. DOE revised its test procedures for cooking products to more accurately measure their efficiency and energy use, and published the revisions as a final rule in 1997. 62 FR 51976 (Oct. 3, 1997). These test procedure amendments included: (1) A reduction in the annual useful cooking energy; (2) a reduction in the number of self-clean oven cycles per year; and (3) incorporation of portions of International Electrotechnical Commission ("IEC") Standard 705-1988, "Methods for measuring the performance of microwave ovens for household and similar purposes," and Amendment 2-

1993 for the testing of microwave ovens.[4] The test procedures for consumer cooking products establish provisions for determining estimated annual operating cost, cooking efficiency (defined as the ratio of cooking energy output to cooking energy input), and energy factor (defined as the ratio of annual useful cooking energy output to total annual energy input). 10 CFR 430.23(i); appendix I. Aside from the provisions for measuring standby power of microwave ovens, all other provisions for consumer cooking products are not currently used for compliance with any energy conservation standards because the present standards are design requirements.

DOE subsequently conducted a rulemaking to address standby and off mode energy consumption, as well as certain active mode (*i.e.*, fan-only mode) testing provisions, for consumer cooking products. DOE published a final rule on October 31, 2012 (77 FR 65942, the "October 2012 TP Final Rule"), adopting standby and off mode provisions that satisfy the EPCA requirement that DOE include measures of standby mode and off mode power in its test procedures for residential products, if technically feasible. (42 U.S.C. 6295(gg)(2)(A))

On January 30, 2013, DOE published a NOPR (78 FR 6232, the "January 2013 TP NOPR") proposing amendments to appendix I that would allow for testing the active mode energy consumption of induction cooking products; *i.e.*, conventional cooking tops equipped with induction heating technology for one or more surface units on the cooking top. DOE proposed to incorporate induction cooking tops by amending the definition of "conventional cooking top" to include induction heating technology. Furthermore, DOE proposed to require for all cooking tops the use of test equipment compatible with induction technology.

[4] DOE subsequently withdrew the test procedures for measuring the active mode of microwave ovens in a July 22, 2010 final rule. 75 FR 42579. DOE has adopted test procedure provisions to measure the standby and off mode energy use of microwave ovens. *See* 78 FR 4015.

Specifically, DOE proposed to replace the solid aluminum test blocks specified at that time in the test procedure for cooking tops with hybrid test blocks comprising two separate pieces: an aluminum body and a stainless steel base. 78 FR 6232, 6234 (Jan. 30, 2013).

On December 3, 2014, DOE published an SNOPR (the "December 2014 TP SNOPR"), in which DOE modified its proposal from the January 2013 TP NOPR in response to comments from interested parties to specify different test equipment that would allow for measuring the energy efficiency of induction cooking tops, and would include an additional test block size for electric surface units with large diameters (both induction and electric resistance). 79 FR 71894. In addition, DOE proposed methods to test non-circular electric surface units, electric surface units with flexible concentric cooking zones, and full-surface induction cooking tops. *Id*. In the December 2014 TP SNOPR, DOE also proposed amendments to add a larger test block size to test gas cooking top burners with higher input rates. *Id*.

In the December 2014 TP SNOPR, DOE also proposed methods for measuring conventional oven volume, clarification that the existing oven test block must be used to test all ovens regardless of input rate, and a method to measure the energy consumption and efficiency of conventional ovens equipped with an oven separator. 79 FR 71894 (Dec. 3, 2014). DOE published the July 2015 TP Final Rule adopting the test procedure amendments discussed above for conventional ovens only. 80 FR 37954.

On June 10, 2015, DOE published a NOPR (the "June 2015 NOPR") proposing new and amended energy conservation standards for consumer conventional ovens. 80 FR 33030. As discussed in the June 2015 NOPR, DOE received a significant number of comments raising

issues with the repeatability and reproducibility of the proposed hybrid test block test method for cooking tops in response to the December 2014 TP SNOPR and in separate interviews conducted with consumer cooking product manufacturers in February and March of 2015. 80 FR 33030, 33039–33040 (June 10, 2015). A number of manufacturers that produce and sell products in Europe supported the use of a water-heating test method and harmonization with IEC Standard 60350-2 Edition 2, "Household electric appliances – Part 2: Hobs – Method for measuring performance" ("IEC Standard 60350-2") for measuring the energy consumption of electric cooking tops. These manufacturers stated that the test methods in IEC Standard 60350-2 are compatible with all electric cooking top types, specify additional cookware diameters to account for the variety of surface unit sizes on the market, and use test loads that represent real-world cooking top loads. Efficiency advocates also recommended that DOE require water-heating test methods to produce a measure of cooking efficiency for conventional cooking tops that is more representative of actual cooking performance than the hybrid test block method. 80 FR 33030, 33039–33040 (June 10, 2015). For these reasons, DOE decided to defer its decision regarding adoption of energy conservation standards for conventional cooking tops until a representative, repeatable and reproducible test method for cooking tops was finalized. 80 FR 33030, 33040 (June 10, 2015).

DOE published an additional test procedure SNOPR on August 22, 2016 (81 FR 57374) (the "August 2016 TP SNOPR") that proposed amendments to the test procedures for conventional cooking tops. Given the feedback from interested parties discussed above and based on the additional testing and analysis conducted for the test procedure rulemaking, in the August 2016 TP SNOPR, DOE withdrew its proposal for testing conventional cooking tops with a hybrid test block. Instead, DOE proposed to amend its test procedure to incorporate by

reference the relevant sections of IEC Standard 60350-2, which provide a water-heating test method to measure the energy consumption of electric cooking tops. The test method specifies the quantity of water to be heated in a standardized test vessel whose size is selected based on the diameter of the surface unit under test. 81 FR 57374, 57381–57384.

DOE also proposed to extend the test methods provided in European standard EN 60350-2:2013 "Household electric cooking appliances Part 2: Hobs—Methods for measuring performance" EN 60530-2:2013 to measure the energy consumption of gas cooking tops by correlating test equipment diameter to burner input rate, including input rates that exceed 14,000 Btu/h. 81 FR 57374, 57385–57386. In addition, DOE also proposed in the August 2016 TP SNOPR to include methods for both electric and gas cooking tops to calculate the annual energy consumption and the integrated annual energy consumption to account for the proposed water-heating test method. 81 FR 57374, 57387–57388.

In the August 2016 TP SNOPR, DOE proposed to repeal the conventional oven test procedure. DOE determined that the conventional oven test procedure may not accurately represent consumer use, as it favors conventional ovens with low thermal mass and does not capture cooking performance-related benefits due to increased thermal mass of the oven cavity. 81 FR 57374, 57378–57379.

On December 16, 2016, DOE published a final rule (the "December 2016 TP Final Rule") repealing the test procedures for conventional ovens for the reasons discussed, and adopting the test procedure amendments for conventional cooking tops proposed in the August 2016 TP SNOPR that, among other things: (1) Incorporated by reference the relevant sections of

European Standard EN 60350-2:2013, which uses a water-heating test method to measure the energy consumption of electric cooking tops; (2) extended the water-heating test method specified in EN 60350-2:2013 to gas cooking tops; and (3) clarified that the 20-minute simmering period starts when the water temperature first reaches 90 °C and does not drop below 90 °C for more than 20 seconds after initially reaching 90 °C. 81 FR 91418.

C. AHAM Petition for Reconsideration

The Administrative Procedure Act (APA), 5 U.S.C. 551 *et seq.*, provides among other things, that "[e]ach agency shall give an interested person the right to petition for the issuance, amendment, or repeal of a rule." (5 U.S.C. 553(e)) DOE received a petition from AHAM requesting that DOE reconsider its December 2016 TP Final Rule. In its petition, AHAM requested that DOE undertake a rulemaking to withdraw the test procedure for conventional cooking tops, while maintaining the repeal of the oven test procedure that was part of the Final Rule. In the interim, AHAM sought an immediate stay of the effectiveness of the Final Rule, including the requirement that manufacturers use the final test procedure to make energy-related claims. In its petition, AHAM claimed that its analyses showed that the test procedure is not representative for gas cooking tops and, for gas and electric cooking tops, has such a high level of variation it will not produce accurate results for certification and enforcement purposes and will not assist consumers in making purchasing decisions based on energy efficiency. DOE published AHAM's petition on April 25, 2018, and requested comments and information on whether DOE should undertake a rulemaking to consider the proposal contained in the petition. 80 FR 17944.

II. Synopsis of the Notice of Proposed Rulemaking

In this NOPR, DOE proposes to withdraw the test procedure for conventional cooking tops after evaluating new information and data produced by AHAM and other interested parties that suggest the test procedure yields inconsistent results and is unnecessarily burdensome to conduct. The following discussion addresses substantive comments[5] received by DOE on AHAM's petition to withdraw the cooking top test procedure.

III. Discussion

The current test procedure in Appendix I for cooking products measures the integrated annual energy consumption of both gas and electric cooking tops. The integrated annual energy consumption comprises active mode energy consumption of each surface unit on the cooking top, as well as the combined low-power mode energy consumption of the cooking top. In general, to measure the active mode energy consumption of each surface unit, a specified amount of water is heated in a vessel at maximum power ("heat-up" period) until a threshold temperature is reached, and then the power is turned down such that the water is left to simmer at just above 90 degrees Centigrade (°C) for 20 minutes ("simmering" period). The active mode energy consumption is the measured energy used during the entire heat-up and simmering periods.

AHAM asserted in its petition that the current test procedure for cooking products is 1) not repeatable or reproducible for both gas and electric cooking tops, 2) is unduly burdensome to conduct, and 3) is not representative for gas cooking tops. In support of its assertions, AHAM

[5] DOE received a number of comments that were not relevant to the topic of AHAM's petition. DOE has not addressed these comments, as they are outside the scope of this NOPR.

submitted results from round-robin testing it conducted and data provided in its petition request. (AHAM, No. 2 at pp. 9, 16, 28, 39)[6]

AHAM asserted in the petition and reiterated in comments that the test procedure is not repeatable nor reproducible for gas cooking tops. AHAM's round robin testing of four laboratories showed a level of lab-to-lab variation in the cooking top gas energy consumption among four different cooking top models (3.02%, 3.63%, 9.67%, and 7.99%) that AHAM stated is higher than the acceptable level of variation, which it assumed to be 2 percent. (AHAM, No. 25 at p. 4) AHAM's data showed that a large contributor to this variation was the simmer portion of the test, and AHAM's investigations found that a possible cause is that the gas flow is highly sensitive to the gas burner knob position. (AHAM, No. 25 at p. 5) BSH Home Appliances Corporation (BSH), Whirlpool Corporation (Whirlpool), and GE Appliances (GEA) also commented that determining the simmer setting is difficult. BSH found that four or five trials per burner were necessary to find the correct simmer setting that would keep the water temperature above 90 °C. (BSH, No. 22 at p. 2; Whirlpool, No. 20 at p. 2; GEA, No. 26 at p. 3) GEA found that two to six trials per burner were necessary to find the correct simmer setting. (GEA, No. 26 at p. 3) Whirlpool also commented that it experienced problems with accuracy in determining the turndown temperature, particularly in instances where a technician was performing multiple tasks in the laboratory and not paying strict attention to water temperatures. (Whirlpool, No. 20 at p. 2) AHAM and Whirlpool also commented that DOE did not address pan warpage as a possible factor in repeatability. (AHAM, No. 2 at p. 38; Whirlpool, No. 20 at p. 4)

[6] A notation in the form "AHAM, No. 2 at pp. 9, 17, 28, 39" identifies a written comment: (1) Made by AHAM; (2) recorded in document number 2 that is filed in the docket for this rulemaking (Docket No. EERE-2018-BT-TP-0004) and available for review at *www.regulations.gov;* and (3) that appears on pages 9, 17, 28, and 39 of document number 2.

AHAM asserted in its petition that DOE did not properly conduct a round robin test to ensure the test procedure is reproducible. AHAM commented that DOE only changed testers but used the same laboratory equipment, which AHAM asserted is insufficient for demonstrating reproducibility. (AHAM, No. 2 at p. 17) Whirlpool, BSH, GEA, and Electrolux Home Products (Electrolux) agreed with AHAM's comment regarding DOE's round robin test. (Whirlpool, No. 20 at p. 2; BSH, No. 22 at p. 2; GEA, No. 26 at p. 4; Electrolux, No. 21 at p. 2)

AHAM also asserted in the petition that the current test procedure is not repeatable or reproducible for electric cooking tops. AHAM stated that DOE did not properly evaluate element cycling in electric cooking tops, which could affect the repeatability of the test procedure. (AHAM, No. 2 at p. 34) GEA, Whirlpool, BSH, and Electrolux agreed with this in their comments. (GEA, No. 26 at pp. 3–4; Whirlpool, No. 20 at p. 2; BSH, No. 22 at p. 3; Electrolux, No. 21 at p. 2) Additionally, AHAM noted that new voluntary Underwriters Laboratories (UL) safety standards (UL 858) could require redesigning the element cycling, which could further cause repeatability issues with the test procedure. (AHAM, No. 2 at pp. 36–37) BSH and Electrolux indicated it was unknown at that time how new electric cooking tops would respond due to the new safety standards. (BSH, No. 22 at p. 5; Electrolux, No. 21 at p. 2) Whirlpool indicated design changes to coil elements were required to meet UL 858, which resulted in increased cycling frequency over shorter durations. (Whirlpool, No. 20 at p. 3)

AHAM also asserted in its petition that the test procedure is overly burdensome, and that DOE underestimated the amount of burden imposed by the test procedure. Specifically, AHAM

stated that the required test vessels would cost $9,500 per set for each laboratory, and that the laboratory infrastructure would have to be significantly upgraded to maintain the air temperature tolerance of ±2 degrees Fahrenheit (°F),[7] as some current laboratories can only maintain ±5 °F. (AHAM, No. 2 at pp. 20, 42) Felix Storch, Inc. submitted a comment in support of the AHAM petition, and stated that the fixed costs of the test procedure would have a greater impact for small business that produce lower volumes. (Felix Storch, No. 10 at p. 1) BSH and GEA both commented that the test procedure would require substantial improvements to their laboratories to meet these requirements. (BSH, No. 22 at p. 5; GEA, No. 26 at p. 7) Additionally, AHAM reported that testing time for a gas cooking top ranged from 23–26 hours per unit. (AHAM, No. 25 at p. 2) GEA found that the test procedure required 18 hours, on average, to test a four-burner cooking top. (GEA, No. 26 at p. 7)

AHAM also asserted in its petition that the test procedure is not representative for gas cooking tops. It commented that Europe uses a different test standard for gas cooking tops, which differs from the test standard for electric cooking tops, because the simmering and heat-up characteristics vary for different electric cooking top technologies (*e.g.*, coil, smooth-radiant, smooth-induction), whereas there are not different types of gas heating technologies. (AHAM, No. 2 at p. 10) Therefore, according to AHAM, gas cooking top testing does not require a simmer portion in the test. (AHAM, No. 2 at p. 15) Additionally, AHAM asserted that the stainless steel cooking vessels used for electric testing are not appropriate for gas cooking top testing, because stainless steel has a lower level of conduction than aluminum. (AHAM, No. 2 at p. 14) BSH similarly asserted that the cookware used for electric cooking tops would not be

[7] The test procedure adopted in the December 2016 TP Final Rule specifies an ambient air temperature tolerance of ±2 °C, which is equivalent to ±3.6 °F.

representative for gas cooking tops. (BSH, No. 22 at p. 4) AHAM also stated that some burners are optimized for specific cooking purposes, and a water boiling test is not representative of how these burners are actually used. AHAM commented that small burners take 35–37 minutes to reach 90 °C, which is unacceptable for consumers. (AHAM, No. 25 at p. 3) BSH and Electrolux commented that water boiling is not representative of all gas cooking top use. (BSH, No. 22 at p. 4; Electrolux, No. 21 at p. 3)

DOE also received a joint submission from Pacific Gas and Electric Company, San Diego Gas and Electric, and Southern California Edison (California Investor Owned Utilities (CAIOUs)) and a joint submission from Appliance Standards Awareness Project, Consumers Union, National Consumer Law Center, Natural Resources Defense Council, and Northwest Energy Efficiency Alliance (Joint Advocates). The CAIOUs and Joint Advocates stated they are not aware of any information to suggest that consumers actually use gas cooking tops differently from electric cooking tops, and further stated that the test procedure should be aligned between those two products. (CAIOU, No. 15 at p. 2; Joint Advocates, No. 24 at p. 1) The CAIOUs and Joint Advocates support the process DOE went through in developing the test procedure, which they stated was rigorous and which included multiple rounds of comments from stakeholders and appropriate modifications to the test procedure in response to these comments. (CAIOU, No. 15 at p. 1; Joint Advocates, No. 24 at p. 1) The CAIOUs and Joint Advocates also support DOE's original testing and conclusions about repeatability, with the CAIOUs stating that they agree with DOE's data indicating that the coefficient of variation in test results is less than 2.0 percent if the test procedure is followed correctly. (CAIOU, No. 15 at pp. 2, 3; Joint Advocates No. 24 at p. 3) The CAIOUs and Joint Advocates stated that AHAM's round robin testing is different

from the actual test procedure, so no conclusion can be drawn from AHAM's data. The CAIOUs and Joint Advocates pointed to round robin testing conducted by the European Committee of Domestic Equipment Manufacturers that DOE evaluated in its rulemaking, with the Joint Advocates suggesting that DOE could conduct its own round robin testing to confirm that the test procedure is repeatable and reproducible. (CAIOU, No. 15 at p. 2; Joint Advocates, No. 24 at pp. 2, 3)

DOE is conducting additional testing, including for gas cooktops, in response to these stakeholder comments. These additional tests will evaluate both test-to-test repeatability and lab-to-lab reproducibility.

To date, DOE has completed testing of ten electric cooking tops to investigate issues raised in AHAM's petition. For a subset of these tests, DOE specifically evaluated repeatability of test results. Table III.1 summarizes the results of testing DOE conducted subsequent to receipt of the AHAM petition in which DOE performed multiple test replications on a single burner (*i.e.* "surface unit"). Table III.1 indicates that the coefficient of variation for each surface unit's energy consumption was no greater than 2 percent for all the units in the test sample.

Table III.1 Summary of Repeatability Tests for Electric Cooking Tops

Cooking Top Unit	Heating Element Type	Surface Unit Location	Number of Test Replications	Average Surface Unit Test Energy Consumption (Wh)	Coefficient of Variation
1	Smooth - Radiant	BL	10	191.7	2.0%
2	Smooth - Radiant	BR	4	196.3	1.3%
		FL	2	400.6	1.0%
3	Smooth – Radiant	FL	2	365.9	0.3%
4	Smooth - Induction	FL	2	340.9	1.3%
5	Smooth – Induction	BL	3	348.2	0.7%

Additionally, DOE examined the specific behavior of electric cooking tops within its test sample that exhibit cycling behavior. For these test units, the control algorithm turns the heating element on and off intermittently during the heat-up period, typically in order to prevent excessive cooking top surface temperatures. Table III.2 summarizes these results for a representative electric cooking top that exhibited varying degrees of cycling behavior during testing.

Table III.2 Summary of Cycling Tests on Electric Cooking Top Unit

Test Replication	Cycling Speed *	Heat-Up Energy (Wh)
1	Slow	143.3
2	Medium	147.0
3	Fast	147.0
4	Fast	146.2
5	Slow	146.2
6	Slow	144.8
7	Slow	142.7
8	very fast	144.6
9	Fast	145.0
10	medium	146.7
Coefficient of Variation		1.0%

* The qualitative cycling speed is based on the duty cycle frequency, ranging from around 0.5 cycles/min for "slow", to more than 3 cycles/min for "very fast."

The results in Table III.2 indicate that the manner in which an electric cooking top surface unit cycled during the heat-up period could vary between tests (*i.e.*, the pattern and frequency of heating element on-off cycles varied).

DOE estimated the time required for performing the test procedure in appendix I. Based on its testing, DOE estimates that a single cooking top surface unit requires around six 90-minute test periods to conduct the complete test procedure, which includes about an hour of cool-down per test period. In total, a cooking top with four surface units requires around 36 work-hours to complete, of which 12 hours require active monitoring by the testing technician.

DOE recognizes that the results of its testing and the results achieved by AHAM show differences have causes yet to be identified. Certainly both sets of tests were conducted by skilled technicians who understand both the product and the test requirements. DOE tentatively determines that existence of these differences suggests that additional investigation of repeatability and reproducibility of the test procedure is warranted. Further, DOE believes that differences in test results are indicative of the test not being representative of energy use or efficiency during an average use cycle. As such, it would be unduly burdensome to subject those manufacturers seeking to make representations as to the efficiency of their products to the requirement to conduct such tests while DOE investigates the issues presented.

Therefore, DOE proposes to withdraw the cooking top test procedure in appendix I to subpart B of part 430. Upon consideration of the comments received, DOE will determine whether to proceed with a final rule to withdraw the test procedure. Because a DOE test method

is necessary to develop a performance-based energy conservation standard, if DOE were to ultimately withdraw the test procedure, DOE would need to conduct additional testing and gather additional data to determine any appropriate test procedure for use in developing a subsequent energy conservation standard.

Both the CAIOUs and Joint Advocates asserted that since there is not a performance-based efficiency standard for cooking tops, there is no need to stay the effectiveness of the test procedure. (CAIOU, No. 15 at p. 3; Joint Advocates, No. 24 at pp. 1,4) DOE notes that EPCA requires that a manufacturer making representations of efficiency must use the DOE test procedure, even if there is no standard. Thus, there may be a cost to leaving in place a test procedure that yields inconsistent results and is unnecessarily burdensome to conduct. (42 U.S.C. 6293(c)) Both the CAIOUs and Joint Advocates also stated that the cooking top test procedure is necessary for consumers to make informed purchasing choices relative to energy use and efficiency. (CAIOU, No. 15 at p. 3; Joint Advocates, No. 24 at pp. 1, 4) However, this statement is true only if the test procedure yields accurate results. Multiple commenters have submitted data and information indicating that repeated attempts to follow the test procedure lead to inaccurate results. This suggests that the cooking products test procedure, as conducted by testing laboratories that may not be familiar with its provisions, does not provide information that is potentially beneficial to consumers.

IV. Procedural Issues and Regulatory Review

A. Review under Executive Orders 12866 and 13563

The Office of Management and Budget (OMB) has determined that this NOPR

constitutes a "significant regulatory action" under section 3(f) of Executive Order 12866, Regulatory Planning and Review, 58 FR 51735 (Oct. 4, 1993). Accordingly, this action was subject to review under the Executive Order by the Office of Information and Regulatory Affairs (OIRA) in the OMB.

B. Review under Executive Orders 13771 and 13777

On January 30, 2017, the President issued Executive Order (E.O.) 13771, "Reducing Regulation and Controlling Regulatory Costs." The E.O. 13771 stated the policy of the executive branch is to be prudent and financially responsible in the expenditure of funds, from both public and private sources. E.O. 13771 stated that it is essential to manage the costs associated with the governmental imposition of private expenditures required to comply with Federal regulations.

Additionally, on February 24, 2017, the President issued E.O. 13777, "Enforcing the Regulatory Reform Agenda." E.O. 13777 required the head of each agency designate an agency official as its Regulatory Reform Officer (RRO). Each RRO oversees the implementation of regulatory reform initiatives and policies to ensure that agencies effectively carry out regulatory reforms, consistent with applicable law. Further, E.O. 13777 requires the establishment of a regulatory task force at each agency. The regulatory task force is required to make recommendations to the agency head regarding the repeal, replacement, or modification of existing regulations, consistent with applicable law. At a minimum, each regulatory reform task force must attempt to identify regulations that:

(i) Eliminate jobs, or inhibit job creation;

(ii) Are outdated, unnecessary, or ineffective;

(iii) Impose costs that exceed benefits;

(iv) Create a serious inconsistency or otherwise interfere with regulatory reform initiatives and policies;

(v) Are inconsistent with the requirements of Information Quality Act, or the guidance issued pursuant to that Act, in particular those regulations that rely in whole or in part on data, information, or methods that are not publicly available or that are insufficiently transparent to meet the standard for reproducibility; or

(vi) Derive from or implement Executive Orders or other Presidential directives that have been subsequently rescinded or substantially modified.

DOE initially concludes that this rulemaking, which would repeal the test procedure for cooktops on the basis that it does not meet the EPCA requirement that a test procedure be designed to measure energy use or efficiency during a representative average use cycle or period of use and not be unduly burdensome to conduct, is consistent with the directives set forth in these executive orders. This action is expected to be a deregulatory action consistent with E.O. 13771 because manufacturers wanting to make voluntary representations of energy efficiency would be required to use the test procedure, which DOE has found does not comport with the statutory requirements. Repeal of the test procedure would allow manufacturers making voluntary representations to determine the best way to make such representations, until such time as DOE promulgates, through rulemaking, a new test procedure.

C. 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 (IRFA) for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant

economic impact on a substantial number of small entities. As required by Executive Order 13272, "Proper Consideration of Small Entities in Agency Rulemaking," 67 FR 53461 (August 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel's website (*http://energy.gov/gc/office-general-counsel*).

DOE reviewed the proposed withdrawal of the cooking tops test procedure under the provisions of the Regulatory Flexibility Act and the procedures and policies published on February 19, 2003.

DOE uses the Small Business Administration's (SBA) small business size standards to determine whether manufacturers qualify as small businesses, which are listed by the North American Industry Classification System (NAICS). The SBA considers a business entity to be a small business, if, together with its affiliates, it employs less than a threshold number of workers specified in 13 CFR part 121. The 2017 NAICS code for cooking tops is 335210, small electrical appliance manufacturing. The threshold number for NAICS code 335210 is 1,500 employees. This employee threshold includes all employees in a business's parent company and any other subsidiaries.

DOE conducted a focused inquiry into small business manufacturers of products covered by this rulemaking. DOE primarily used the Compliance Certification Database in DOE's Compliance Certification Management System for cooking products to create a list of companies that sell cooking tops. DOE identified a total of 24 distinct companies that sell cooking tops in the United States.

DOE reviewed these companies to determine whether the entities met the SBA's definition of "small business" and screened out any companies that do not offer products covered by this rulemaking, do not meet the definition of a "small business," or are foreign-owned and operated. Based on this review, DOE has identified 12 domestic manufacturers of cooking tops that are potential small businesses. Through this analysis, DOE has determined the expected effects of this rulemaking on these covered small businesses and whether an IRFA was needed (*i.e.*, whether DOE could certify that this rulemaking would not have a significant impact).

DOE is proposing to withdraw the cooking tops test procedure for manufacturers. This would not increase manufacturer's testing burden or add any costs to any manufacturers, small or large. Therefore, DOE concludes that the impacts of this proposal would not have a "significant economic impact on a substantial number of small entities," and that the preparation of an IRFA is not warranted. DOE will transmit the certification and supporting statement of factual basis to the Chief Counsel for Advocacy of the Small Business Administration for review under 5 U.S.C. 605(b).

D. Review under the Paperwork Reduction Act

Manufacturers of cooking tops must certify to DOE that their products comply with any applicable energy conservation standards. In certifying compliance, manufacturers must test their products according to the DOE test procedures for cooking products, including any amendments adopted for those test procedures. DOE has established regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment. *See generally* 10 CFR part 429. The collection-of-information requirement for the certification and recordkeeping is subject to review and approval by OMB under the Paperwork Reduction Act

(PRA). This requirement has been approved by OMB under OMB control number 1910-1400. Public reporting burden for the certification is estimated to average 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.

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.

E. Review under the National Environmental Policy Act of 1969

In this proposed rule, DOE proposes test procedure amendments that it expects will be used to develop and implement future energy conservation standards for cooking products. 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 revoke the existing test procedures. The existing test procedures are not used for determining compliance with an energy conservation standard and as such, their revocation would not affect the amount, quality or distribution of energy usage, and, therefore, would not result in any environmental impacts. Thus, this rulemaking is covered by Categorical Exclusion A5 under 10 CFR part 1021, subpart D, which applies to any rulemaking that interprets or amends an existing rule without changing the environmental effect of that rule. Accordingly, neither an environmental assessment nor an environmental impact statement is required.

F. Review under Executive Order 13132

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

G. Review under Executive Order 12988

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, "Civil Justice Reform," 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. 61 FR 4729 (Feb. 7, 1996). Regarding the review required by section 3(a), section 3(b) of Executive Order 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) Clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this proposed rule meets the relevant standards of Executive Order 12988.

H. Review under the Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) requires each federal agency to assess the effects of federal regulatory actions on state, local, and tribal governments and the private sector. Pub. L. 104-4, sec. 201 (codified at 2 U.S.C. 1531). 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 a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a), (b)) The UMRA also requires a federal agency to develop an effective process to permit timely input by elected officers of state, local, and tribal governments on a proposed "significant intergovernmental mandate," and requires an agency plan for giving

notice and opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect them. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. DOE's policy statement is also available at *http://energy.gov/gc/office-general-counsel.* DOE examined this proposed rule according to UMRA and its statement of policy and determined that the rule contains neither an intergovernmental mandate, nor a mandate that may result in the expenditure of $100 million or more in any year, so these requirements do not apply.

I. Review under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105-277) requires federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This 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.

J. 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 rule would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

K. Review under the Treasury and General Government Appropriations Act, 2001

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516 note) provides for federal agencies to review most disseminations of information to the public under information quality 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 this NOPR under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

L. 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.

This regulatory action to propose the withdrawal of the cooking products test procedure is not a significant regulatory action under Executive Order 12866. Moreover, it would not have

a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as a significant energy action by the Administrator of OIRA. Therefore, it is not a significant energy action, and, accordingly, DOE has not prepared a Statement of Energy Effects.

M. Description of Materials Incorporated by Reference

In this NOPR, DOE proposes to incorporate by reference the following test standards: (1) IEC 62301, Household electrical appliances—Measurement of standby power," Publication 62301 (First Edition 2005-06), section 5; and (2) *IEC 62301* Household electrical appliances—Measurement of standby power, (Edition 2.0 2011-01), sections 4 and 5. These standards include test conditions and testing procedures for measuring the average standby mode and average off mode power consumption of microwaves and were previously incorporated in appendix I.

Copies of IEC 62301 (First Edition) and IEC 62301 (Second Edition) can be obtained from the American National Standards Institute, 25 W. 43rd Street, 4th Floor, New York, NY 10036, (212) 642-4900, or go to http://webstore.ansi.org.

V. Public Participation

A. Submission of Comments

DOE will accept comments, data, and information regarding this proposed rule before or after the public meeting, but no later than the date provided in the **DATES** section at the beginning of this proposed rule. Interested parties may submit comments, data, and other information using any of the methods described in the **ADDRESSES** section at the beginning of this NOPR.

Submitting comments via *http://www.regulations.gov*. The http://*www.regulations.gov* webpage will require you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment itself or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. Otherwise, persons viewing comments will see only first and last names, organization names, correspondence containing comments, and any documents submitted with the comments.

Do not submit to *http://www.regulations.gov* information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as confidential business information or CBI). Comments submitted through *http://www.regulations.gov* cannot be claimed as CBI. Comments received through the website will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section below.

DOE processes submissions made through *http://www.regulations.gov* before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that *http://www.regulations.gov* provides after you have successfully uploaded your comment.

Submitting comments via email, hand delivery/courier, or mail. Comments and documents submitted via email, hand delivery/courier, or mail also will be posted to *http://www.regulations.gov*. If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying documents. Instead, provide your contact information in a cover letter. Include your first and last names, email address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments.

Include contact information each time you submit comments, data, documents, and other information to DOE. If you submit via mail or hand delivery/courier, please provide all items on a CD, if feasible, in which case it is not necessary to submit printed copies. No telefacsimiles (faxes) will be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII) file format. Provide documents that are not secured, that are written in English, and that are free of any

defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

Campaign form letters. Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters' names compiled into one or more PDFs. This reduces comment processing and posting time.

Confidential Business Information. 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 via email, postal mail, or hand delivery/courier two well-marked copies: one copy of the document marked "confidential" including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. Submit these documents via email to: *CookProducts2018TP0004@ee.doe.gov* or on a CD, if feasible. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

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 has previously been 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 character due to the passage of time; and (7) why disclosure of the information would be contrary to the public interest.

It is DOE's policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

B. Issues on Which DOE Seeks Comment

DOE welcomes comments on any aspect of this proposal, without restriction.

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.

Signed in Washington, D.C., on: August 1, 2019.

Daniel R Simmons,

Assistant Secretary,

Energy Efficiency and Renewable Energy.

For the reasons set forth in the preamble, DOE proposes to amend part 430 of chapter II, subchapter D, of title 10 of the Code of Federal Regulations, 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.

§430.3 [Amended]

2. Section 430.3 is amended by:

a. Removing paragraph (l); and

b. Redesignating paragraphs (m) through (v) as (l) through (u).

3. Section 430.23 is amended by revising paragraph (i) to read as follows:

§430.23 Test procedures for the measurement of energy and water consumption.

* * * * *

(i) *Cooking products*. Determine the standby power for microwave ovens, excluding any microwave oven component of a combined cooking product, according to section 3.2.1 of appendix I to this subpart. Round standby power to the nearest 0.1 watt.

* * * * *

4. Appendix I to subpart B of part 430 is revised to read as follows:

Appendix I to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Cooking Products

NOTE: Any representation related to energy or power consumption of cooking products made after June 14, 2017, must be based upon results generated under this test procedure. Upon the compliance date(s) of any energy conservation standard(s) for cooking products, use of the applicable provisions of this test procedure to demonstrate compliance with the energy conservation standard will also be required.

1. Definitions

The following definitions apply to the test procedures in this appendix, including the test procedures incorporated by reference:

1.1 *Active mode* means a mode in which the product is connected to a mains power source, has been activated, and is performing the main function of producing heat by means of a gas flame, electric resistance heating, electric inductive heating, or microwave energy.

1.2 *Built-in* means the product is enclosed in surrounding cabinetry, walls, or other similar structures on at least three sides, and can be supported by surrounding cabinetry or the floor.

1.3 *Combined cooking product* means a household cooking appliance that combines a cooking product with other appliance functionality, which may or may not include another cooking product. Combined cooking products include the following products: Conventional range, microwave/conventional cooking top, microwave/conventional oven, and microwave/conventional range.

1.4 *Drop-in* means the product is supported by horizontal surface cabinetry.

1.5 *IEC 62301 (First Edition)* 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).

1.6 *IEC 62301 (Second Edition)* means the test standard published by the International Electrotechnical Commission, titled "Household electrical appliances—Measurement of standby power," Publication 62301 (Edition 2.0 2011-01) (incorporated by reference; see §430.3).

1.7 *Normal non-operating temperature* means a temperature of all areas of an appliance to be tested that is within 5 °F (2.8 °C) of the temperature that the identical areas of the same basic model of the appliance would attain if it remained in the test room for 24 hours while not operating with all oven doors closed.

1.8 *Off mode* means any mode in which a cooking product is connected to a mains power source and is not providing any active mode or standby function, and where the mode may persist for an indefinite time. An indicator that only shows the user that the product is in the off position is included within the classification of an off mode.

1.9 *Standby mode* means any mode in which a cooking product is connected to a mains power source and offers one or more of the following user-oriented or protective functions which may persist for an indefinite time:

(1) Facilitation of the activation of other modes (including activation or deactivation of active mode) by remote switch (including remote control), internal sensor, or timer;

(2) Provision of continuous functions, including information or status displays (including clocks) or sensor-based functions. A timer is a continuous clock function (which may or may not be associated with a display) that allows for regularly scheduled tasks and that operates on a continuous basis.

2. Test Conditions

2.1 *Installation*. Install a drop-in or built-in cooking product in a test enclosure in accordance with manufacturer's instructions. If the manufacturer's instructions specify that the cooking product may be used in multiple installation conditions, install the appliance according to the built-in configuration. Completely assemble the product with all handles, knobs, guards, and similar components mounted in place. Position any electric resistance heaters and baffles in accordance with the manufacturer's instructions.

2.1.1 *Microwave ovens, excluding any microwave oven component of a combined cooking product*. Install the microwave oven in accordance with the manufacturer's instructions and connect to an electrical supply circuit with voltage as specified in section 2.2.1 of this appendix. Install the microwave oven also in accordance with Section 5, Paragraph 5.2 of IEC 62301 (Second Edition) (incorporated by reference; see §430.3), disregarding the provisions regarding batteries and the determination, classification, and testing of relevant modes. A watt meter shall be installed in the circuit and shall be as described in section 2.6.1.1 of this appendix.

2.2 *Energy supply*.

2.2.1 *Electrical supply*.

2.2.1.1 *Voltage*. For microwave oven testing, maintain the electrical supply to the unit at 240/120 volts ±1 percent. Maintain the electrical supply frequency for all products at 60 hertz ±1 percent.

2.3 *Air circulation*. Maintain air circulation in the room sufficient to secure a reasonably uniform temperature distribution, but do not cause a direct draft on the unit under test.

2.4 *Ambient room test conditions*

2.4.1 *Standby mode and off mode ambient temperature*. For standby mode and off mode testing, maintain room ambient air temperature conditions as specified in Section 4, Paragraph 4.2 of IEC 62301 (Second Edition) (incorporated by reference; see §430.3).

2.5 *Normal non-operating temperature*. All areas of the appliance to be tested must attain the normal non-operating temperature, as defined in section 1.7 of this appendix, before any testing begins. Measure the applicable normal non-operating temperature using the equipment specified in sections 2.6.2.1 of this appendix.

2.6 *Instrumentation*. Perform all test measurements using the following instruments, as appropriate:

2.6.1 *Electrical measurements*.

2.6.1.1 *Standby mode and off mode watt meter*. The watt meter used to measure standby mode and off mode power must meet the requirements specified in Section 4, Paragraph 4.4 of IEC 62301 (Second Edition) (incorporated by reference; see §430.3). For microwave oven standby mode and off mode testing, if the power measuring instrument used for testing is unable to measure and record the crest factor, power factor, or maximum current ratio during the test measurement period, measure the crest factor, power factor, and maximum current ratio immediately before and after the test measurement period to determine whether these characteristics meet the requirements specified in Section 4, Paragraph 4.4 of IEC 62301 (Second Edition).

2.6.2 *Temperature measurement equipment*.

2.6.2.1 *Room temperature indicating system*. For the test of microwave ovens, the room temperature indicating system must have an error no greater than ±1 °F (±0.6 °C) over the range 65° to 90 °F (18 °C to 32 °C).

3. Test Methods and Measurements

3.1. *Test methods.*

3.1.1 *Microwave oven.*

3.1.1.1 *Microwave oven test standby mode and off mode power except for any microwave oven component of a combined cooking product*. Establish the testing conditions set forth in section 2, Test Conditions, of this appendix. For microwave ovens that drop from a higher power state to a lower power state as discussed in Section 5, Paragraph 5.1, Note 1 of IEC 62301 (Second Edition) (incorporated by reference; see §430.3), allow sufficient time for the microwave oven to reach the lower power state before proceeding with the test measurement. Follow the test procedure as specified in Section 5, Paragraph 5.3.2 of IEC 62301 (Second Edition). For units in which power varies as a function of displayed time in standby mode, set the clock time to 3:23 and use the average power approach described in Section 5, Paragraph 5.3.2(a) of IEC 62301 (First Edition), but with a single test period of 10 minutes +0/−2 sec after an additional stabilization period until the clock time reaches 3:33. If a microwave oven is capable of operation in either standby mode or off mode, as defined in sections 1.9 and 1.8 of this appendix, respectively, or both, test the microwave oven in each mode in which it can operate.

3.2 *Test measurements.*

3.2.1 *Microwave oven standby mode and off mode power except for any microwave oven component of a combined cooking product*. Make measurements as specified in Section 5, Paragraph 5.3 of IEC 62301 (Second Edition) (incorporated by reference; see §430.3). If the microwave oven is capable of operating in standby mode, as defined in section 1.9 of this appendix, measure the average standby mode power of the microwave oven, PSB, in watts as specified in section 3.1.1.1 of this appendix. If the microwave oven is capable of operating in off

mode, as defined in section 1.8 of this appendix, measure the average off mode power of the microwave oven, POM, as specified in section 3.1.1.1.

3.3 *Recorded values.*

3.3.1 For microwave ovens except for any microwave oven component of a combined cooking product, record the average standby mode power, PSB, for the microwave oven standby mode, as determined in section 3.2.1 of this appendix for a microwave oven capable of operating in standby mode. Record the average off mode power, POM, for the microwave oven off mode power test, as determined in section 3.2.1 of this appendix for a microwave oven capable of operating in off mode.

[FR Doc. 2019-16892 Filed: 8/8/2019 8:45 am; Publication Date: 8/9/2019]