[6450-01-P]

DEPARTMENT OF ENERGY

10 CFR Part 430

[EERE-2017-BT-TP-0024]

RIN 1904-AE01

Energy Conservation Program: Test Procedure for Microwave Ovens

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

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

SUMMARY: The U.S. Department of Energy ("DOE") proposes to amend the existing test procedure for microwave ovens to provide additional specification for the test conditions related to microwave oven clock displays and microwave ovens with network functions. DOE is also proposing editorial changes to add a section title inadvertently omitted and to revise two incorrect cross-references. As part of this proposal, DOE is announcing a public meeting to collect comments and data on its proposal.

DATES: *Meeting:* DOE will hold a webinar on November 14, 2029, from 10:00 a.m. to 1:00 p.m. See section V, "Public Participation," for webinar registration information, participant instructions, and information about the capabilities available to webinar participants. If no participants register for the webinar then it will be cancelled. *Comments:* Written comments and information are requested and will be accepted before and after the public meeting, but no later than **[INSERT DATE 60 DAYS AFTER**

DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]. See section V, "Public Participation," for details.

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at *http://www.regulations.gov*. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE–2017–BT–TP–0024, by any of the following methods:

1) *Federal eRulemaking Portal: http://www.regulations.gov*. Follow the instructions for submitting comments.
2) *E-mail: MWO2017TP0024@ee.doe.gov*. Include the docket number and/or RIN in the subject line of the message.
3) *Postal 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. Telephone: (202) 287-1445. 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, DC, 20024. Telephone: (202) 287-1445. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

No telefacsimilies (faxes) will be accepted. For detailed instructions on submitting comments and additional information on the rulemaking process, see section V of this document.

Docket: The docket, which includes *Federal Register* notices, public meeting attendee lists and transcripts, comments, and other supporting documents/materials, is available for review at *http://www.regulations.gov*. All documents in the docket are listed in the *http://www.regulations.gov* index. However, some documents listed in the index, such as those containing information that is exempt from public disclosure, may not be publicly available.

The docket web page can be found at *https://www.regulations.gov/docket?D=EERE-2017-BT-TP-0024*. The docket web page will contain simple instructions on how to access all documents, including public comments, in the docket. See section V of this document for information on how to submit comments through *http://www.regulations.gov*.

FOR FURTHER INFORMATION CONTACT:

Dr. Stephanie Johnson, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE-2J, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 287-1943. E-mail: *MWO2017TP0024@ee.doe.gov*.

Ms. Celia Sher, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 287-6122. E-mail: *Celia.Sher@hq.doe.gov*.

For further information on how to submit a comment, review other public comments and the docket, or participate in the webinar, contact the Appliance and Equipment Standards Program staff at (202) 287-1445 or by e-mail: *ApplianceStandardsQuestions@ee.doe.gov*.

SUPPLEMENTARY INFORMATION:

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I. Authority and Background

Microwave 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 energy conservation standards for microwave ovens are currently prescribed at Title 10 of the Code of Federal Regulations ("CFR") part 430.32(j). DOE's test procedures for microwave ovens are prescribed at 10 CFR 430.23(i) and appendix I to subpart B of 10 CFR part 430 ("Appendix I"). The following sections discuss DOE's authority to establish test procedures for microwave ovens and relevant background information regarding DOE's consideration of test procedures for this product.

A. Authority

The Energy Policy and Conservation Act, as amended ("EPCA"),[1] among other things, authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. (42 U.S.C. 6291–6317) Title III, Part B[2] of EPCA established the Energy Conservation Program for Consumer Products Other Than Automobiles, which sets forth a variety of provisions designed to improve energy efficiency. These products include microwave ovens, the subject of this document. (42 U.S.C. 6292(a)(10))

The energy conservation program under EPCA consists essentially of four parts: (1) testing, (2) labeling, (3) Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of EPCA include definitions (42 U.S.C. 6291), energy conservation standards (42 U.S.C. 6295), test procedures (42 U.S.C. 6293), labeling provisions (42 U.S.C. 6294), 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 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

[1] All references to EPCA in this document refer to the statute as amended through America's Water Infrastructure Act of 2018, Public Law 115–270 (Oct. 23, 2018).
[2] For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.

determine whether the products comply with relevant standards promulgated under EPCA. (42 U.S.C. 6295(s))

Federal energy efficiency requirements for covered products established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6297) DOE may, however, grant waivers of Federal preemption for particular State laws or regulations, in accordance with the procedures and other provisions of EPCA. (42 U.S.C. 6297(d))

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))

In addition, EPCA requires that DOE amend its test procedures for all covered products to integrate measures of standby mode and off mode energy consumption. (42 U.S.C. 6295(gg)(2)(A)) Standby mode and off mode energy consumption must be incorporated into the overall energy efficiency, energy consumption, or other energy descriptor for each covered product unless the current test procedures already account for and incorporate standby and off mode energy consumption or such integration is technically infeasible. If an integrated test procedure is technically infeasible, DOE must prescribe a separate standby mode and off mode energy use test procedure for the

covered product, if technically feasible. (42 U.S.C. 6295(gg)(2)(A)(ii)) Any such amendment must consider the most current versions of the International Electrotechnical Commission ("IEC") Standard 62301[3] and IEC Standard 62087[4] as applicable. (42 U.S.C. 6295(gg)(2)(A))

If DOE determines that a test procedure amendment is warranted, it must publish proposed test procedures and offer the public an opportunity to present oral and written comments on them. (42 U.S.C. 6293(b)(2)) EPCA also requires that, at least once every 7 years, DOE evaluate test procedures for each type of covered product, including microwave ovens, to determine whether amended test procedures would more accurately or fully comply with the requirements for the test procedures not to be unduly burdensome to conduct and be reasonably designed to produce test results that reflect energy efficiency, energy use, and estimated operating costs during a representative average use cycle or period of use. (42 U.S.C. 6293(b)(1)(A)) If the Secretary determines, on his own behalf or in response to a petition by any interested person, that a test procedure should be prescribed or amended, the Secretary shall promptly publish in the *Federal Register* proposed test procedures and afford interested persons an opportunity to present oral and written data, views, and arguments with respect to such procedures. The comment period on a proposed rule to amend a test procedure shall be at least 60 days and may not exceed 270 days. In prescribing or amending a test procedure, the Secretary shall take into account such information as the Secretary determines

[3] IEC 62301, "Household electrical appliances—Measurement of standby power" (Edition 2.0, 2011-01).
[4] IEC 62087, "Methods of measurement for the power consumption of audio, video, and related equipment" (Edition 3.0, 2011-04).

relevant to such procedure, including technological developments relating to energy use or energy efficiency of the type (or class) of covered products involved. (42 U.S.C. 6293(b)(2)) If DOE determines that test procedure revisions are not appropriate, DOE must publish its determination not to amend the test procedures. DOE is publishing this notice of proposed rulemaking ("NOPR") in satisfaction of the 7-year review requirement specified in EPCA. (42 U.S.C. 6293(b)(1)(A))

B. Background

DOE's existing test procedure for microwave ovens appears at Appendix I, titled "Uniform Test Method for Measuring the Energy Consumption of Cooking Products". For reasons discussed in the following sections, the current microwave oven test procedure does not include active mode and measures energy use only in standby mode and off mode. Before today, DOE issued four documents related to possible amendments to the test procedure: a NOPR in 2013, two requests for information (in 2011 and 2018), and a notice of data availability in 2012.

1. Active Mode Amendments

DOE originally established the test procedure for microwave ovens on May 10, 1978, based on a 1975 version of the industry standard developed by the IEC. 43 FR 20120. DOE amended the original test procedure in an October 3, 1997 final rule that measured active mode energy use only and was based on an updated version of IEC Standard 705–Second Edition 1988 and Amendment 2–1993, "Methods for Measuring the Performance of Microwave Ovens for Households and Similar Purposes" ("IEC

705"). 62 FR 51976. On July 22, 2010, DOE published a final rule in which it repealed the regulatory test procedure for measuring the cooking efficiency of microwave ovens. 75 FR 42579 ("July 2010 Repeal Final Rule"). In the July 2010 Repeal Final Rule, DOE determined that the existing microwave oven test procedure did not produce representative and repeatable test results. 75 FR 42579, 42580. DOE stated at that time that it was unaware of any test procedures that had been developed that addressed these concerns. 75 FR 42579, 42581.

On October 24, 2011, DOE published a request for information ("RFI") to inform its consideration of active mode testing methodologies for microwave ovens ("October 2011 RFI"). 76 FR 65631. DOE specifically sought information, data, and comments regarding representative and repeatable methods for measuring the energy use of microwave ovens in active mode, particularly for the microwave-only and convection-microwave cooking (*i.e.*, microwave plus convection and any other means of cooking) modes.

To inform its consideration of a test procedure for the microwave oven active mode, DOE conducted testing to evaluate potential methods for measuring the active mode energy use for these products, including the microwave-only, convection-only, and convection-microwave cooking modes. On June 5, 2012, DOE published a notice of data availability ("June 2012 NODA") to present test results and analytical approaches that DOE was considering for potential amendments to the microwave oven test procedure and to request additional comment and information on these results. 77 FR 33106. In the June 2012 NODA, DOE presented test results from microwave-only, convection-only,

and convection-microwave cooking mode testing using water loads, food simulation mixtures, and real food loads. DOE also presented test results from testing of the convection-only cooking mode using the aluminum test block specified in the DOE conventional oven test procedure then in effect.[5]

On February 4, 2013, DOE published a NOPR ("February 2013 NOPR") in which it proposed adding provisions to measure active mode energy use for microwave ovens, including microwave-only ovens and convection microwave ovens. 78 FR 7940. For measuring the energy use in microwave-only cooking mode, DOE proposed test methods based on the November 2011 draft version of IEC 60705, "Household microwave ovens – Methods for measuring performance." 78 FR 7940, 7942. DOE also proposed provisions for measuring the energy use of convection microwave ovens in convection-only cooking mode based on the test procedure for conventional ovens in Appendix I. *Id.* DOE further proposed to calculate the energy use of convection-microwave cooking mode for convection microwave ovens by apportioning the microwave-only cooking mode and convection-only cooking mode energy consumption measurements based on typical consumer use. *Id.*

[5] The DOE conventional oven test procedure in Appendix I was later repealed in a final rule published on December 16, 2016. 81 FR 91418. DOE determined that the conventional oven test procedure did not accurately represent consumer use, as it favored conventional ovens with low thermal mass and did not capture cooking performance-related benefits due to increased thermal mass of the oven cavity. 81 FR 91418, 91423-91424.

The IEC issued an updated version of IEC 60705, "Household microwave ovens – Methods for measuring performance" Edition 4.1 on June 30, 2014 ("IEC 60705 Ed. 4.1").

On January 18, 2018, DOE published an RFI ("January 2018 RFI") describing the current requirements for the microwave oven test procedure and requesting information on several topics including the feasibility of pursuing active cooking mode and fan-only mode test methods for microwave-only ovens and convection microwave ovens. 83 FR 2566. DOE discussed the previous active mode test procedure proposal from the February 2013 NOPR and requested interested parties to provide updated data and information. This NOPR addresses the comments received in response to the January 2018 RFI regarding active mode for microwave ovens. DOE is not proposing an active mode test procedure.

The interested parties that submitted relevant comments to DOE in response to the January 2018 RFI are listed in Table I-1.[6]

[6] In addition to the five commenters listed in the table, DOE received two comments that were submitted anonymously and not relevant to the microwave oven test procedure. These comments will not be addressed.

Table I-1 January 2018 RFI Written Comments

Organization(s)	Reference in this NOPR	Organization Type
Appliance Standards Awareness Project ("ASAP"), American Council for an Energy-Efficient Economy ("ACEEE"), Consumer Federation of America ("CFA"), Consumers Union ("CU"), National Consumer Law Center ("NCLC"), Northeast Energy Efficiency Partnerships ("NEEP"), Northwest Energy Efficiency Alliance ("NEEA"), and Northwest Power and Conservation Council ("NPCC")	Joint Commenters	Efficiency Organizations
Association of Home Appliance Manufacturers	AHAM	Trade Association
GE Appliances, a Haier Company	GE	Manufacturer
Karla Quezada	Karla Quezada	Consumer
Whirlpool Corporation	Whirlpool	Manufacturer

On May 30, 2018, the IEC issued an additional amendment to IEC 60705, which it consolidated into a version entitled Edition 4.2. The changes in this amendment related to the definition of rounding and the determination of usable and overall volume of the microwave oven.

2. Standby Mode Amendments

As discussed, DOE is required to amend the test procedures for covered products to address standby mode and off mode energy consumption and to integrate such energy consumption into the energy descriptor for that product unless the current test procedure already fully account for such consumption. (42 U.S.C. 6295(gg)(2)(A)) If integration is technically infeasible, DOE must prescribe a separate standby mode and off mode energy use test procedure, if technically feasible. *Id.* Any such amendment must consider the most current versions of IEC 62301 "Household electrical appliances—Measurement of standby power," and IEC 62087 "Methods of measurement for the power consumption of audio, video, and related equipment." *Id.*

On March 9, 2011, DOE published an interim final rule ("March 2011 Interim Final Rule") amending the test procedure for microwave ovens. 76 FR 12825. The March 2011 Interim Final Rule incorporated by reference IEC 62301 First Edition 2005-06 ("IEC 62301 (First Edition)") to establish test conditions and testing procedures for measuring the average standby mode and average off mode power consumption. 76 FR 12825, 12828. As authorized by EPCA, DOE also added definitions of "active mode," "standby mode," and "off mode" based on the definitions provided in IEC 62301 Edition 2.0 2011-01 ("IEC 62301 (Second Edition)"). 76 FR 12825, 12836. In addition, DOE adopted language to clarify the application of IEC 62301 (First Edition) to measuring standby mode and off mode power. Specifically, DOE defined the test duration for units under test in which the measured standby mode power consumption of the microwave oven displays varies depending on the time-of-day displayed on the clock. 76 FR 12825, 12828.

The amendments adopted in the March 2011 Interim Final Rule became effective on April 8, 2011. 76 FR 12825, 12925. However, DOE noted that to ensure that the amended test procedure adequately addresses the EPCA requirement to consider the most recent version of IEC 62301, and recognizing that the IEC issued IEC 62301 (Second Edition) in January of 2011, DOE issued the microwave oven test procedure as an interim final rule and offered an additional 180-day comment period to consider whether any changes should be made to the interim final rule in light of publication of IEC 62301 (Second Edition). 76 FR 12825, 12830–12831. DOE stated that it would consider these comments and, to the extent necessary, publish a final rulemaking incorporating any changes. *Id.*

Based in part on public comment, DOE further analyzed IEC 62301 (Second Edition). DOE subsequently published a final rule on January 18, 2013 ("January 2013 Final Rule"), amending the test procedure for microwave ovens to reference certain provisions of IEC 62301 (Second Edition), along with clarifying language, for the measurement of standby mode and off mode energy use. 78 FR 4015. For only those microwave oven basic models with power consumption that varies as a function of the time displayed, DOE maintained the existing use of IEC 62301 (First Edition) for measuring standby mode power to minimize manufacturer burden. 78 FR 4015, 4021. DOE also determined that microwave ovens combined with other appliance functionality satisfy the definition of "microwave oven" at 10 CFR 430.2, but due to a lack of data and other information, did not adopt provisions to measure the standby mode and off mode energy use of the microwave oven component of these combined cooking products.[7] 78 FR 4015, 4022.

In the January 2018 RFI, DOE requested information on the current status of technology for network functions in microwave ovens, which may affect the standby mode energy consumption. This NOPR addresses the comments received in response to the January 2018 RFI regarding standby mode for microwave ovens and proposes minor amendments to the standby mode test procedures.

[7] Appendix I defines "combined cooking product" as 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.

II. Synopsis of the Notice of Proposed Rulemaking

In this NOPR, DOE proposes to update Appendix I with 1) requirements for both the clock display and network functionality when testing standby and off mode and 2) technical corrections. DOE does not propose adding an active mode measurement.

In particular, for the standby and off mode test procedure, DOE proposes requiring that (1) any clock display is turned on and remains on during testing, unless the clock display powers down automatically and the product provides no option for the consumer to prevent the display from powering down automatically; and (2) any network function is disabled during testing, if it is possible to do so by means provided in the manufacturer's user manual. If disabling is not possible, the energy use associated with network functionality should not be reported to DOE and will not be used to determine compliance with DOE energy conservation standards. DOE also proposes editorial changes to add a section title inadvertently left out of the test procedure and to revise two incorrect cross-references.

DOE has tentatively determined that the proposed test procedure would not be unduly burdensome. DOE's proposed actions are summarized in Table II-1 and addressed in detail in section III of this document.

Table II-1 Summary of Changes in Proposed Test Procedure Relative to Current Test Procedure

Current DOE Test Procedure	Proposed Test Procedure	Attribution
References paragraph 5.2 of IEC 62301 (Second Edition), which specifies that the product must be tested in accordance with manufacturer's	Specifies that the microwave oven must be tested with the clock display on, regardless of the manufacturer's	To improve representativeness.

Current DOE Test Procedure	Proposed Test Procedure	Attribution
instructions or using default settings if no instructions are available. If there are no instructions and if default settings are not indicated, then the microwave oven is tested as supplied.	instruction or default setting or supplied setting, unless the clock display powers down automatically and the product provides no setting that allows the consumer to prevent such automatic power down.	
Does not explicitly specify configuration of a network function, if present. References paragraph 5.2 of IEC 62301 (Second Edition), which specifies that the product must be tested in accordance with manufacturer's instructions or using default settings if no instructions are available. If there are no instructions and if default settings are not indicated, then the microwave oven is tested as supplied. In DOE's previous test procedures for microwaves, however, DOE determined that it would not measure network functionality energy use. In particular, DOE specifically determined in its 2012 test procedure not to include provisions for measuring energy use in network functionality (77 FR 65942, 65953–54 (Oct. 31, 2012), and DOE's most recent test procedure for microwaves did not address network functionality (81 FR 91418; Dec. 16, 2016).	Specifies that if present, the network function must be disabled.	To improve repeatability and comparability of results.
Section title inadvertently left out and two cross-references are incorrect.	Section title added, and cross-references corrected.	To improve readability.

III. Discussion

In the January 2018 RFI, DOE sought feedback on several topics such as the feasibility of pursuing an active mode test method for microwave ovens, industry trends for connected appliances, and microwave oven standby mode setup. 83 FR 2566. DOE received several comments in response to the January 2018 RFI. In the following sections, DOE discusses the issues identified in previous rulemakings, comments received from stakeholders in response to specific topics in the January 2018 RFI, and DOE's responses to these comments.

DOE also received general comments in response to the January 2018 RFI. AHAM stated that the current test procedure is accurate, repeatable, and reproducible, and is not unduly burdensome to conduct, and therefore urged DOE to issue a determination that the test procedure does not need to be amended. (AHAM, No. 4 at p. 2)[8] GE and Whirlpool supported AHAM's comments in their entirety. (GE, No. 3 at p. 1; Whirlpool, No. 5 at p. 1) Whirlpool additionally commented that the current microwave oven test procedure is clear, with no major issues identified with repeatability, reproducibility, representativeness, or test burden. (Whirlpool, No. 5 at p. 1)

As discussed in the following sections, DOE has identified several amendments that it has initially determined are warranted to ensure the repeatability of the test procedure and the representativeness of the results.

AHAM commented that if DOE determines that amendments to the existing test procedure are warranted, any final rule for an amended test procedure should be issued before DOE initiates any standards rulemaking. According to AHAM, engineering analysis and sound policy conclusions can only be based on a known, final test procedure that all stakeholders have had the opportunity to use to evaluate design options and proposed standard levels. (AHAM, No. 4 at p. 2) AHAM further requested that DOE not publish a standards RFI or framework document until at least 180 days after a test

[8] A notation in the form "AHAM, No. 4 at p. 2" identifies a written comment: (1) made AHAM; (2) recorded in document number 4 that is filed in the docket of this test procedure rulemaking (Docket No. EERE–2017–BT–TP–0024, available for review at *http://www.regulations.gov*); and (3) which appears on page 2 of document number 4.

procedure final rule publishes that would be used to determine compliance with any final standards. (AHAM, No. 4 at p. 2)

DOE recognizes that a finalized test procedure allows interested parties to provide more effective comments on proposed standards. Further, if the test procedure is finalized sufficiently in advance of the issuance of proposed standards, manufacturers will have experience using the new test procedure, which may provide additional insights into the proposed standards. As discussed, this NOPR is proposing amendments to the microwave oven test procedure, not the energy conservation standard, which is outside the scope of this rulemaking.

A. Scope of Coverage

This rulemaking applies to microwave ovens, which DOE defines as a category of cooking products which is a household cooking appliance consisting of a compartment designed to cook or heat food by means of microwave energy, including microwave ovens with or without thermal elements designed for surface browning of food and convection microwave ovens. This includes any microwave oven(s) component of a combined cooking product. 10 CFR 430.2. DOE is not proposing to amend the scope of the current microwave oven test procedure.

B. Active Mode Test Methods

As discussed in section I.B.1 of this document, in the July 2010 Repeal Final Rule, DOE repealed the active mode test provisions originally established in Appendix I

because they did not produce representative and repeatable measurements of microwave oven energy use in active mode. 75 FR 42579. DOE proposed in the February 2013 NOPR to add provisions to the microwave oven test procedure in Appendix I for measuring energy use in microwave-only cooking mode based on the November 2011 draft version of IEC 60705. 78 FR 7940, 7946. AHAM commented on the February 2013 NOPR that it "fully supports harmonization with IEC 60705. But DOE should not base the U.S. test procedure on a draft of that standard. Instead, DOE should wait to harmonize with the final IEC 60705." (AHAM, EERE-2010-BT-TP-0023, No. 18 at p. 4) On June 30, 2014, IEC published IEC 60705 Ed. 4.1. Therefore, in the January 2018 RFI, DOE sought additional feedback on active mode test methods, including data and information that may not have been available at the time of the previous rulemaking. 83 FR 2566, 2570–2572 (Jan. 18, 2018)

In response to the January 2018 RFI, AHAM commented that adding an active mode measurement would significantly increase test burden, contrary to the EPCA requirement that the test procedure not be unduly burdensome to conduct. AHAM explained that adding an active mode measurement would increase the test time by as much as five to six times the current test time of about 2 hours, an increase which AHAM believes is significant. AHAM estimated that each active mode test would likely require 2 hours, and because three beaker sizes would each be tested twice, the total test time would be about 12 hours. Further, AHAM stated that an active mode measurement would require new laboratory equipment and could require new or updated facilities due to the additional test time and test requirements. According to AHAM, for example, manufacturer and third-party laboratories would likely need to build new laboratories to

be able to maintain the current capacity, given the longer test time. AHAM also commented that it is not aware of companies currently conducting an active mode test procedure, so by requiring such methodology, DOE would be imposing new burden on companies. Therefore, AHAM stated that DOE should not amend the test procedure at this time. (AHAM, No. 4 at pp. 2–3) GE commented that the energy costs associated with active mode functionalities do not justify the burden and cost imposed on manufacturers to perform an active mode test. (GE, No. 3 at p. 1) GE commented that, based on a U.S. average electricity kilowatt-hour price of about 12 cents, a typical consumer using microwave-only cooking mode would consume energy costing less than 75 cents per month. (GE, No. 3 at p. 2)

AHAM also commented that an active mode test procedure would de-harmonize the United States with the rest of the world. Even though IEC 60705 Ed. 4.1 measures active mode, no country requires active mode testing for regulatory purposes to AHAM's knowledge. AHAM stated that this was particularly problematic because microwave ovens, perhaps more than any other home appliance, are global products. (AHAM, No. 4 at pp. 1, 3)

Further, AHAM commented that standards for active mode would not be economically justified. AHAM, referencing an April 8, 2009 final rule ("April 2009 Standards Final Rule", 74 FR 16040), stated that DOE has previously found that the energy savings and emissions reductions would be outweighed by the large decrease in the net present value of consumer impacts (with almost all consumers experiencing net cost), the economic burden on many consumers, and the large capital conversion costs

that could result in a reduction in industry net present value. AHAM does not believe this analysis would produce different results now. (AHAM, No. 4 at p. 3) AHAM further added that to its knowledge, no technology is currently available to reduce energy use in the active mode for either microwave-only ovens or convection microwave ovens. (AHAM, No. 4 at pp. 3–4)

Conversely, the Joint Advocates supported an active mode test procedure, stating that DOE's analysis from the February 2013 NOPR showed that, on average, active mode energy consumption is almost 90 percent of microwave oven energy use. (Joint Advocates, No. 8 at pp.1–2) These commenters stated that an active mode test procedure would provide valuable consumer purchasing information, allowing manufacturers to distinguish efficient products, some of which may contain features that increase consumer utility. (Joint Advocates, No. 8 at pp. 1–2) The Joint Advocates believe that technologies may be available to significantly improve efficiency in active mode, specifically solid-state radio-frequency ("RF") components, which may also provide greater consumer utility in terms of more even heating and longer lifetimes. Without a test procedure, the Joint Advocates believe that manufacturers do not have a way to distinguish the potential improved performance. (Joint Advocates, No. 8 at p. 2)

To measure the energy consumption of microwave ovens in the microwave-only cooking mode, the Joint Advocates supported the use of IEC 60705 Ed. 4.1. (Joint Advocates, No. 8 at p. 2) They cited results that DOE presented in the February 2013 NOPR, which were based on a draft version of the IEC 60705 standard, showing minimal

test-to-test variation for each water load size.[9] Further, the Joint Advocates stated that the European Committee for Electrotechnical Standardization's ("CENELEC") round robin testing that evaluated the IEC 60705 standard found it to be repeatable and reproducible as well. (Joint Advocates, No. 8 at pp. 2–3) Karla Quezada supported harmonizing with the IEC 60705 Ed. 4.1 standard unless it would delay a test that may be useful with current technology and devices. (Karla Quezada, No. 2 at p. 2)

In this document, DOE is not proposing any updates to Appendix I to measure microwave oven energy use in active mode. As stated, EPCA requires that test procedures for microwave ovens be reasonably designed to produce test results which measure energy efficiency or energy use 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 has initially determined that an active mode measurement for microwave ovens would be unduly burdensome at this time. DOE finds at this point that the expected increase in testing cost resulting from increased testing time and the potential need for new laboratory equipment and facility upgrades would not be justified especially because DOE previously determined in the April 2009 Standards Final Rule that an energy conservation standard for microwave oven active mode would not be technologically feasible and economically justified. 74 FR 16040,16087. In the context of evaluating the

[9] IEC 60705 requires that the active mode energy consumption of a microwave oven be evaluated by heating three distinct known quantities of water (275g, 350g and 1000g, also called water loads) through multiple temperature gradients and measuring the cumulative energy required for the water to attain the final temperature. The resulting data is used to generate an energy consumption metric for microwave ovens.

microwave test procedure, the circumstances that led to the determination in the April 2009 Final Rule have not changed substantially at this time.

Regarding the potential use of solid-state Radio Frequency ("RF") technologies, based on a review of the current state of the technology, this is still a new technology that is not commercially available in the United States. At present, it is unclear whether IEC 60705 Ed. 4.2 would provide results that are representative of an average use cycle, in a repeatable manner, for microwave ovens using solid-state RF technologies.

C. Standby Mode and Off Mode Test Methods

1. Displays and Clocks

In the January 2018 RFI, DOE requested feedback on certain topics related to microwave oven displays and clocks. DOE requested information about whether the standby mode and off mode test procedure should be amended, specifically for microwave ovens with an option to turn the display on or off. DOE also requested data on the difference in standby power consumption with the display turned on and off, as well as consumer usage data on how frequently consumers power off the clock display when this option is available, and how much consumers value a microwave oven clock display that is capable of remaining powered on at all times. DOE also requested information regarding how manufacturer instructions for the initial setup of the microwave oven differ from the default as-shipped settings, and the merits of requiring initial setup in accordance with manufacturer instructions versus requiring testing using the default settings. 83 FR 2566, 2572.

AHAM commented that the existing standby mode and off mode test procedure is repeatable, reproducible, representative, not unduly burdensome to conduct, and does not need to be amended at this time. AHAM believes that without available data suggesting the standby mode and off mode test procedure should be amended, DOE should not change it. (AHAM, No. 4 at pp. 1, 8) AHAM further stated that the current standby and off mode test is consistent with how other products are tested (*i.e.* the test unit is set up consistent with manufacturer instructions, and if no instructions are available, the default settings are used). AHAM urged DOE not to deviate from this approach, especially without supporting data. (AHAM, No. 4 at pp. 8–9) Karla Quezada commented that although manufacturers contend that the energy consumption of the microwave oven clock display is negligible, the aggregate of such small individual energy consumptions may result in meaningful cost to the consumer. (Karla Quezada, No. 2 at pp. 2–3) For the reasons discussed in the remainder of this section, DOE is proposing additional direction to the standby mode and off mode test procedure for microwave ovens, which it has initially determined will improve the representativeness and reproducibility of the test results.

For microwave ovens that provide an option to turn the display on or off, the existing requirements in section 2.1.3 of Appendix I specify that these ovens are to be tested in accordance with manufacturer's instructions, and if no instructions are available, using the factory or "default" settings, or if such settings are not indicated, testing the microwave oven as supplied. Section 3.1.3.1 of Appendix I further specifies that for microwave ovens in which power varies as a function of displayed time in standby mode (*e.g.*, as with microwave ovens with a clock that uses seven-segment light emitting diode

("LED") displays), the clock time must be set to 3:23 prior to taking measurements. However, to ensure that testing is more representative of microwave ovens that display the clock time, DOE is proposing to explicitly specify that the clock display must be on during testing unless the clock display powers down automatically and the product provides no option for the consumer to prevent the display from powering down automatically. In a prior energy conservation standard proposed rulemaking, manufacturers stated that consumers expect that a microwave oven equipped with a display should show clock time while in standby mode. 73 FR 62034, 62080 (Oct. 17, 2008). Accordingly, DOE proposes that for microwave ovens that provide consumers the ability to turn the clock on or off, the unit must be set up such that the clock display remains on at all times during testing, unless the clock powers down automatically and the product provides no available setting for the consumer to prevent the automatic powering-down of the clock. The requirement to set up the clock and for the clock to remain on would apply regardless of manufacturer instruction, the default setting, or the supplied setting (as specified in paragraph 5.2 of IEC 62301 (Second Edition), which is referenced in section 2.1.3 of Appendix I for setup instructions).

DOE requests comment on the proposed updates to keep the clock display on during testing, unless the clock powers down automatically with no setting to allow the consumer to override this feature, and whether these updates would result in additional test burden. DOE also requests comment on consumer habits regarding the use of clock displays that can be optionally turned on or off.

2. Connected Functions

In the January 2018 RFI, DOE requested information on whether to amend the standby mode and off mode test procedure to address microwave ovens that have network functions, such as Bluetooth® technology, including information for suitable test methods.[10] DOE also requested information on whether any microwave ovens currently on the market include internet connections to allow for additional control functions, including the utility of this functionality, potential energy impacts, and the appropriate energy-related settings to use for testing. 83 FR 2566, 2573 (Jan. 18, 2018)

AHAM asserted that the current microwave oven test procedure does not require measuring network functionality. According to AHAM, these features are still developing, as are consumers' use and understanding of them, and regulating them now would likely stifle innovation and could, in some cases, prevent manufacturers from including such features. It stated that connected appliances and the market for them are in the early stages of development. AHAM stated that meaningful data on consumer use are unavailable due to limited market penetration. (AHAM, No. 4 at p. 9) AHAM further stated that it opposes amending the test procedure to account for newly developing features such as connected functions without national, statistically significant field data on consumer use. In order to avoid stifling this new area of innovation and its potential energy savings benefits, and to reduce the cumulative regulatory burden already experienced by the appliance industry, AHAM urged DOE not to revise the test procedure to account for the energy use of connected functions. (AHAM, No. 4 at p. 9)

[10] A "network" in this context includes communication between two or more separate independently powered devices or products.

According to AHAM, connected features operate with different capabilities and may have energy saving benefits to consumers. It stated that connected appliances can play a critical role in increasing the energy efficiency of the grid and can be used by utilities to increase demand response by peak load shifting as well as facilitate increased penetration of renewable sources of power. (AHAM, No. 4 at p. 9) GE commented that DOE's regulation of network functionality or other modes involving networked features would impede technology advances in microwave cooking products and the "Internet of things." (GE, No. 3 at p. 3)

The Joint Advocates commented that as connected products are introduced to the market, the energy use of these features should be captured to encourage manufacturers to provide these features with low power consumption, which would benefit consumers. (Joint Advocates, No. 8 at p. 1) These commenters recommended that DOE require the measurement of energy use associated with Bluetooth® or internet connections. If the energy use of connected features is not captured in the test procedure, the Joint Advocates asserted that consumers will not have information about these features' energy use, and manufacturers that develop ways to provide these features with low power consumption will not be able to distinguish their products in the market. (Joint Advocates, No. 8 at p. 3) The Joint Advocates stated that at least one manufacturer offers a unit that uses Bluetooth® technology, and multiple manufacturers have plans to introduce "connected microwave ovens." (Joint Advocates, No. 8 at p. 3)

DOE recently published an RFI on the emerging smart technology appliance and equipment market. 83 FR 46886 (Sept. 17, 2018). In that RFI, DOE sought information

to better understand market trends and issues in the emerging market for appliances and commercial equipment that incorporate smart technology. DOE's intent in issuing the RFI was to ensure that DOE did not inadvertently impede such innovation in fulfilling its statutory obligations in setting efficiency standards for covered products and equipment. In this NOPR, DOE seeks comment on the same issues presented in the RFI as they may be applicable to microwave ovens.

DOE is aware of microwave ovens with connected functionality that use either Bluetooth® or Wi-Fi to communicate with other cooking products, such as a range, or with a consumer, either via voice commands or a smartphone or tablet. Under DOE's current regulations, the standby energy use of a microwave oven would be affected by whether the network function is active. Section 2.1.3 of Appendix I generally specifies that a microwave oven must be installed in accordance with paragraph 5.2 of IEC 62301 (Second Edition), which states that the product must be prepared and setup in accordance with manufacturer's instructions, and if no instructions for use are available, then factory or default settings must be used, or if such settings are not indicated, the product must be tested as supplied. However, the current microwave oven test procedure does not state how to configure a network function, regardless of whether such instructions are provided in the manufacturer's instructions. For a unit that is connected to the internet, the speed and configuration of an internet connection could also impact the energy consumed by the device. Also, based on a review of manufacturer websites and user manuals of various appliances, as well as testing conducted at DOE and third-party laboratories, connected features are implemented in a variety of ways across different

brands. Further, the design and operation of these features is continuously evolving as the nascent market begins to grow for these products.

To further ensure the repeatability and comparability of test results between models, and consistent with the 2018 "smart products" RFI, DOE is proposing that connected features be disabled during testing. Because these features are relatively new and their presence in the market and use in field is limited, DOE does not have enough information to indicate what would constitute a representative configuration. Without this information, requiring testing with the network function enabled would be inappropriate. Specifically, in this NOPR, DOE proposes that microwave ovens that are equipped with a network function, such as Bluetooth® technology or the capability for internet connectivity (*i.e.*, "connected microwave ovens"), are to be tested with the network function disabled during testing. If a network function cannot be disabled per manufacturer's instructions in the owner's manual (*e.g.* by pressing a button on the microwave oven's control panel), DOE proposes that the energy use of such network functions need not be reported to DOE nor used in determining compliance with the applicable energy conservation standard. However, DOE recognizes there are alternative approaches to address the issue of microwaves that cannot turn the network functionality off. One such approach would be to require the energy use of the network feature be measured and subtracted from the standby mode energy measurement. DOE additionally requests comment on this alternative approach.

DOE proposes to clarify that section 2.1.3 of Appendix I, which specifies that a microwave oven must be installed in accordance with paragraph 5.2 of IEC 62301

(Second Edition), does not apply with respect to measuring the energy use of network functions. Paragraph 5.2 states, in part, that the product must be prepared and setup in accordance with manufacturer's instructions, and if no instructions for use are available, then factory or default settings must be used, or if such settings are not indicated, the product must be tested as supplied. In DOE's previous test procedures for microwaves, however, DOE determined that it would not measure network functionality energy use. In particular, DOE specifically determined in its 2012 test procedure not to include provisions for measuring energy use in network functionality (77 FR 65942, 65953–54 (Oct. 31, 2012), and DOE's most recent test procedure for microwaves did not address network functionality (81 FR 91418; Dec. 16, 2016).

DOE requests comment on the proposed requirements for testing microwave ovens with network functions disabled, including its alternative approach of subtracting the energy used by the network functions from the standby mode energy consumption measurement, where network functions cannot be disabled .

D. Integrated Annual Energy Consumption Metric

EPCA requires DOE to incorporate the active mode, standby mode, and off mode energy use values into a single energy use metric, unless it is technically infeasible to do so. (42 U.S.C. 6295(gg)(2)(A)) Accordingly, in the January 2018 RFI, DOE requested input on methods for calculating an integrated annual energy use metric for microwave

ovens. DOE also requested data on the consumer usage habits for each available operating mode for microwave ovens. 83 FR 2566, 2569–2570, 2573 (Jan. 18, 2018)

AHAM commented that because it opposes including active mode measurements in the microwave oven test procedure, it did not have feedback at this time on an integrated metric. AHAM also commented that it is not aware of any updated consumer usage data for microwave oven active modes. (AHAM, No. 4 at p. 10)

As discussed, DOE is not proposing an active mode test method for microwave ovens in this NOPR. As such, consideration of an integrated metric is moot, and DOE is not proposing to make any changes to the existing metric for microwave oven energy consumption.

DOE requests comment on maintaining the current metric for microwave oven energy consumption.

E. Section Title and Cross-Reference

DOE is proposing to add a title to distinguish test procedure provisions regarding the power supply and to correct two cross-references. DOE is proposing to insert "2.2.2 Gas supply" in Appendix I prior to general energy supply specifications for cooking products related to gas burner adjustments, natural gas, propane, and test gas. This title would provide parallel organization with the electrical supply provisions in section 2.2.1 of Appendix I and would improve readability. Additionally, in two places the current test procedure cites section 1.15 of Appendix I for the definition of "inactive mode." The

definition for "inactive mode" is at section 1.14. DOE is proposing to correct these cross-references to avoid potential confusion. [Update this section if section 2.2.2.1-4 is removed prior to this NOPR being published]

F. Test Procedure Costs, Harmonization, and Other Topics

1. Test Procedure Costs and Impact

EPCA requires that test procedures proposed by DOE not be unduly burdensome to conduct. In this NOPR, DOE proposes that a microwave oven clock display be turned on, notwithstanding the requirements in section 2.1.3 of Appendix I, which references paragraph 5.2 of IEC 62301 (Second Edition). That is, DOE proposes the following changes from the current requirements of section 2.1.3 of Appendix I: the unit would not be installed according to manufacturer instructions, default setting, or supplied setting if necessary to ensure that the clock display remains on unless the microwave oven automatically powers down the clock display and the product provides no setting that allows the consumer to prevent the clock display from powering down automatically. DOE also proposes to clarify that a unit with a network function be tested with the network function disabled during testing. DOE has tentatively determined that these proposed amendments would not be unduly burdensome for manufacturers to conduct.

The proposed amendments would not impact the scope of the test procedure (*i.e.*, the proposal would not require manufacturers to test microwave ovens that are not already required to be tested). DOE has tentatively determined that the proposed amendments would not alter the measured energy efficiency/energy use of microwave ovens.

To evaluate whether any microwave oven would require retesting if DOE finalized the direction to keep the clock display on at all times during testing, if possible, DOE sought to identify whether any microwave ovens that are currently required to be tested with the clock display off would be tested with the clock display on under the proposal in this document. DOE reviewed all microwave ovens that are currently certified as having standby power less than 0.5 watts in DOE's Compliance Certification Database.[11] DOE selected 0.5 watts as the threshold value to investigate because during testing and investigation conducted during the previous microwave oven energy conservation standards final rule (78 FR 36316; published on June 17, 2013), DOE observed that a standby power consumption of 0.5 watts or less typically indicates that the microwave oven uses more efficient components or that the microwave oven clock display is off.

DOE identified 50 models of microwave ovens with standby power less than 0.5 watts. Of those identified microwave ovens that had user manuals available online or that DOE tested in-house (comprising a total of 35 of the 50 initially identified models), DOE reviewed the user manuals of these models to determine the status of the microwave oven clock display required under the current test procedure as compared to the status of the microwave oven clock display if tested under the proposed procedure. For the models with manuals available online, 31 user manuals either specify that the microwave oven has an LED display or describe one of the features of the display screen as the capability

[11] U.S. Department of Energy's Compliance Certification Database. Last accessed December 26, 2018. *https://www.regulations.doe.gov/certification-data/products.html#q=Product_Group_s%3A**

to display the clock time when the microwave oven is not in use. The manuals also include instructions to setup the clock time.

Given that these 31 models of microwave ovens have LED clock displays and/or instructions for setup of the clock time in the user manuals, both the current test procedure and the test procedure as proposed in this NOPR would require the microwave oven clock display to be on during testing. As noted, section 3.1.3.1 of Appendix I requires setting the clock to 3:23 before testing any unit with a power draw that varies based on the displayed time. The current procedure also requires setting up each unit according to manufacturer instructions prior to testing. Section 2.1.3 of Appendix I. These 31 models of microwave ovens are currently required to be tested with the microwave oven display clock on during testing, which would not change if DOE adopted the proposal in this NOPR.

For the remaining four models of microwave ovens that have online user manuals, the user manual did not contain instructions to set up the clock time, nor any image indicating a means on the microwave oven's control panel to configure the clock. In these instances, the user manuals identified the microwave ovens as having an auto-power down feature that shuts off the display, and the product provides no option to disable this feature; thus, these units would continue to be tested with the clock display off under the proposed direction in this document.

Based on this review of the 35 models of microwave ovens with available user

manuals, DOE did not identify any microwave oven that would require retesting under the proposed requirement to always keep the clock display on during testing unless the clock display powers down automatically and the product provides no option for the consumer to prevent the display from powering down automatically. Therefore, based on this review of 35 microwave ovens, DOE has tentatively determined that this proposal would not have any cost burden associated with it. DOE requests comment on its analysis that the proposal to keep the clock display on at all times, if possible, would not impact manufacturers because no microwave ovens would require retesting or recertification. DOE also requests information on microwave ovens that allow the consumer to turn the clock on and off, and the manufacturer instructions provided and/or default conditions in such instances.

Similarly, the proposed additional direction for testing microwave ovens equipped with a network function with the function disabled would not affect any measured standby power for current products. In DOE's previous test procedures for microwaves, DOE determined that it would not measure network functionality energy use. As additional information, DOE reviewed the user manuals of microwave ovens that have network functions and are currently available in the market. For the microwave oven that operates on Bluetooth®, DOE observed that this function is "off" as shipped, and a user would need to turn it on manually to use it. Similarly, for microwave ovens that connect via Wi-Fi, users needed to manually enable the Wi-Fi connection after setting up the unit. Therefore, the proposal would not change the requirements for testing any of these microwave ovens with a network function.

DOE requests comment on its understanding of the impact and associated costs of the proposed test procedure.

2. Harmonization with Industry Test Methods

The test procedure for microwave ovens at Appendix I incorporates by reference certain provisions of IEC 62301 (Second Edition) regarding test conditions, equipment, setup, and methods for measuring standby mode and off mode power consumption. DOE seeks comment on the degree to which the DOE test procedure should consider and be harmonized further with IEC 62301 (Second Edition).

DOE also notes, as discussed, the IEC issued IEC 60705 Ed. 4.2, but DOE is not proposing to incorporate it either in whole or in part. DOE seeks comment on whether and to what degree DOE should consider and harmonize the Federal test procedure for microwaves with IEC 60705 Ed. 4.2.

DOE also requests comment on the benefits and burdens of adopting any other industry/voluntary consensus-based or other appropriate test method, without modification

3. Other Test Procedure Topics

In addition to the issues identified earlier in this document, DOE also welcomes comment on any other aspect of the existing test procedure for microwave ovens not already addressed by the specific areas identified in this document. DOE particularly

seeks information that would improve the representativeness of the test procedure, as well as information that would help DOE create a procedure that would limit manufacturer test burden through streamlining or simplifying testing requirements. Comments regarding repeatability and reproducibility are also welcome.

DOE notes that under Executive Order 13771, "Reducing Regulation and Controlling Regulatory Costs," Executive Branch agencies such as DOE must manage the costs associated with the imposition of expenditures required to comply with Federal regulations. See 82 FR 9339 (Feb. 3, 2017). Consistent with that Executive Order, DOE encourages the public to provide input on measures DOE could take to lower the cost of its regulations applicable to microwave ovens consistent with the requirements of EPCA.

G. Compliance Date and Waivers

EPCA prescribes that all representations of energy efficiency and energy use, including those made on marketing materials and product labels, must be made in accordance with an amended test procedure, beginning 180 days after publication of such a test procedure final rule in the *Federal Register*. (42 U.S.C. 6293(c)(2)) If DOE were to publish an amended test procedure, EPCA provides an allowance for individual manufacturers to petition DOE for an extension of the 180-day period if the manufacturer may experience undue hardship in meeting the deadline. (42 U.S.C. 6293(c)(3)) To receive such an extension, petitions must be filed with DOE no later than 60 days before the end of the 180-day period and must detail how the manufacturer will experience undue hardship. *Id.*

Upon the compliance date of an amended test procedure, should DOE issue such an amendment, any waivers that had been previously issued and are in effect that pertain to issues addressed by the amended test procedure are terminated. 10 CFR 430.27(h)(2). Recipients of any such waivers would be required to test the products subject to the waiver according to the amended test procedure as of the compliance date of the amended test procedure. At present, there are no waivers that address test procedure issues that would be addressed by the amendments proposed in this document.

DOE proposes to remove the introductory note in Appendix I. The introductory note references the June 14, 2017 date after which any representations related to energy or power consumption of cooking products must be based upon results generated under the test procedure. As this date has passed, the introductory note is no longer needed.

IV. Procedural Issues and Regulatory Review

A. Review Under Executive Order 12866

The Office of Management and Budget ("OMB") has determined that test procedure rulemakings do not constitute "significant regulatory actions" under section 3(f) of Executive Order 12866, Regulatory Planning and Review, 58 FR 51735 (Oct. 4, 1993). Accordingly, this action was not 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." 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 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 is consistent with the directives set forth in these executive orders. This proposed rule is estimated to result in no costs. Therefore, if finalized as proposed, this rule is expected to be an E.O. 13771 other action.

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 (Aug. 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 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 this proposed rule to amend the test procedures for microwave ovens under the provisions of the Regulatory Flexibility Act and the procedures and policies published on February 19, 2003. DOE has tentatively determined that this proposed test procedure, if adopted, would not significantly increase the costs to microwave oven manufacturers.

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 microwave ovens is 335220, major household appliance manufacturing. The threshold number for NAICS code 335220 is 1,500 employees. This employee threshold includes all employees in a business's parent company and any other subsidiaries.

Most of the manufacturers supplying microwave ovens are either large multinational corporations or overseas microwave original equipment manufacturers ("OEMs") that manufacture microwave ovens sold under another company's brand. DOE conducted a focused inquiry into small business manufacturers of products covered by this rulemaking. DOE primarily used DOE's Compliance Certification Database for microwave ovens to create a list of companies that sell microwave ovens covered by this rulemaking in the United States. DOE also used the California Energy Commission's database, Modernized Appliance Efficiency Database System, to correlate brands with

OEMs. DOE identified a total of 48 distinct companies that manufacture or import microwave ovens in the United States.

DOE then reviewed these companies to determine whether the entities met the SBA's definition of "small business" and screened out any companies that do not manufacture 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 one potential small business that manufactures microwave ovens in the United States. Through this analysis, DOE has determined the expected effects of this rulemaking on this covered small business and whether an IRFA was needed (*i.e.*, whether DOE could certify that this rulemaking would not have a significant impact).

As previously stated, the proposal to amend the test procedure for microwave ovens by requiring that the clock display be on at all times during testing, unless the product provides no available setting to allow the consumer to prevent the clock display from powering down automatically, should not impact any of the microwave oven models with available user manuals identified by DOE. Further, the proposed additional direction for testing microwave ovens equipped with a network function with any connected functionality disabled would not affect the small business manufacturer because they do not make microwave ovens with network functions.

Therefore, DOE concludes that the impacts of the test procedure amendments proposed in this NOPR 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).

DOE seeks comment on its conclusion that one small business manufactured microwave ovens in the United States, with fewer than 1,500 total employees. Additionally, DOE requests comment on its determination that the proposed amendments would not have a significant economic impact on this small business.

D. Review Under the Paperwork Reduction Act of 1995

Manufacturers of microwave ovens must certify to DOE that their products comply with any applicable energy conservation standards. To certify compliance, manufacturers must first obtain test data for their products according to the DOE test procedures, 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, including microwave ovens. (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 35 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

DOE is analyzing this proposed regulation in accordance with the National Environmental Policy Act (NEPA) and DOE's NEPA implementing regulations (10 CFR Part 1021). DOE's regulations include a categorical exclusion for rulemakings interpreting or amending an existing rule or regulation that does not change the environmental effect of the rule or regulation being amended. 10 CFR Part 1021, Subpart D, Appendix A5. DOE anticipates that this rulemaking qualifies for categorical exclusion A5 because it is an interpretive rulemaking that does not change the environmental effect of the rule and otherwise meets the requirements for application of a categorical exclusion. See 10 CFR Part 1021.410. DOE will complete its NEPA review before issuing the final rule.

F. Review Under Executive Order 13132

Executive Order 13132, "Federalism," 64 FR 43255 (Aug. 4, 1999) imposes certain requirements on 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(d)) No further action is required by Executive Order 13132.

G. 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 (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 sections 3(a) and 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, the 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. Public Law No. 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 small governments. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820; 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 (Public Law 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

DOE has determined, under Executive Order 12630, "Governmental Actions and Interference with Constitutionally Protected Property Rights" 53 FR 8859 (March 18, 1988) that this proposed regulation would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

K. Review Under 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 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 this proposed rule 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 promulgated 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.

The proposed regulatory action to amend the test procedure for measuring the energy efficiency of microwave ovens 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. Review Under Section 32 of the Federal Energy Administration Act of 1974

Under section 301 of the Department of Energy Organization Act (Public Law 95–91; 42 U.S.C. 7101), 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. (15 U.S.C. 788; FEAA) Section 32 essentially provides in relevant part that, where a proposed rule authorizes or requires use of commercial standards, the notice of proposed 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 procedure for microwave ovens in this NOPR do not incorporate any new commercial standard.

N. Description of Materials Incorporated by Reference

In this NOPR, DOE is not proposing to incorporate by reference any new industry standard.

V. Public Participation

A. Participating in the Webinar

The time and date of the webinar are listed in the DATES section at the beginning of this document. If no participants register for the webinar then it will be cancelled. Webinar registration information, participant instructions, and information about the

capabilities available to webinar participants will be published on DOE's website: [TBD]. Participants are responsible for ensuring their systems are compatible with the webinar software.

Additionally, you may request an in-person meeting to be held prior to the close of the request period provided in the DATES section of this document. Requests for an in-person meeting may be made by contacting Appliance and Equipment Standards Program staff at (202) 287-1445 or by email: Appliance_Standards_Public_Meetings@ee.doe.gov.

B. Procedure for Submitting Prepared General Statements for Distribution

Any person who has plans to present a prepared general statement may request that copies of his or her statement be made available at the public meeting. Such persons may submit requests, along with an advance electronic copy of their statement in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII) file format, to the appropriate address shown in the ADDRESSES section at the beginning of this notice. The request and advance copy of statements must be received at least one week before the public meeting and may be emailed, hand-delivered, or sent by mail. DOE prefers to receive requests and advance copies via email. Please include a telephone number to enable DOE staff to make a follow-up contact, if needed.

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). A court reporter will be present to record the proceedings and prepare a transcript. DOE reserves the right to schedule the order of presentations and to establish the procedures governing the conduct of the public meeting. After the public meeting and until the end of the comment period, interested parties may submit further comments on the proceedings and any aspect of the rulemaking.

The public meeting will be conducted in an informal, conference style. DOE will present summaries of comments received before the public meeting, allow time for prepared general statements by participants, and encourage all interested parties to share their views on issues affecting this rulemaking. Each participant will be allowed to make a general statement (within time limits determined by DOE), before the discussion of specific topics. DOE will permit, as time permits, other participants to comment briefly on any general statements.

At the end of all prepared statements on a topic, DOE will permit participants to clarify their statements briefly and comment on statements made by others. Participants should be prepared to answer questions by DOE and by other participants concerning these issues. DOE representatives may also ask questions of participants concerning 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 that may be needed for the proper conduct of the public meeting.

A transcript of the public meeting will be included in the docket, which can be viewed as described in the *Docket* section at the beginning of this notice. In addition, any person may buy a copy of the transcript from the transcribing reporter.

D. 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 using any of the methods described in the ADDRESSES section at the beginning of this proposed rule.

Submitting comments via *http://www.regulations.gov*. The *http://www.regulations.gov* web page 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 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. 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 ("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.

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, or postal mail. Comments and documents submitted via email, hand delivery, 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 on 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, please provide all items on a CD, if feasible. It is not necessary to submit printed copies. No facsimiles (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, written in English and 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. According 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 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 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.

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).

E. Issues on Which DOE Seeks Comment

Although DOE welcomes comments on any aspect of this proposal, DOE is particularly interested in receiving comments and views of interested parties concerning the following issues:

1) DOE requests comment on the proposed updates related to keeping the microwave oven clock display on during standby mode testing, unless the product provides no available setting to allow the consumer to prevent the clock display from powering down automatically, and whether these updates would result in additional test burden. DOE also requests comment on consumer habits regarding the use of clock displays that can be optionally turned on or off. See section III.C.1 of this document.
2) DOE requests comment on the proposed requirements for testing microwave ovens with network function. See section III.C.2 of this document.
3) DOE requests comment on maintaining the current metric for microwave oven energy consumption. See section III.D of this document.

4) DOE requests comment on its analysis that the proposal to keep the clock display on at all times, if possible, would not impact manufacturers because no microwave ovens would require retesting or recertification. DOE also requests information on microwave ovens that allow the consumer to turn the clock on and off, the manufacturer instructions provided and/or default conditions in such instances, and how such models are currently tested. See section III.F.1 of this document.
5) DOE requests comment on its understanding of the impact and associated costs of the proposed test procedure. See section III.F.1 of this document.
6) DOE seeks comment on whether and to what degree DOE should consider and harmonize the Federal test procedure for microwaves with IEC 60705 Ed. 4.2. DOE also requests comment on the benefits and burdens of adopting any industry/voluntary consensus-based or other appropriate test procedure, without modification. See section III.F.2 of this document.
7) DOE seeks comment on its conclusion that one small business manufactures microwave ovens in the United States, with fewer than 1,500 total employees. Additionally, DOE requests comment on its determination that the proposed amendments would not have a significant economic impact on this small business. See section IV.C of this document.

VI. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this proposed rule.

List of Subjects

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, DC, on October 17, 2019.

Alexander N. Fitzsimmons
Acting Deputy Assistant Secretary for
Energy Efficiency
Energy Efficiency and Renewable Energy

For the reasons stated in the preamble, DOE is proposing to amend part 430 of Chapter II of Title 10, 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.

2. Appendix I to Subpart B of Part 430 is amended by:

a. Removing the introductory note;

b. Revising section 2.1.3;

c. Adding section 2.2.2; and

d. Revising sections 3.2.1.2 and 3.2.2.

The revisions and addition read as follows:

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

* * * * *

2.1.3 *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 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. If the microwave oven can communicate through a network (*e.g.*, Bluetooth® or internet connection), disable the network function, if it is possible to disable it by means provided in the manufacturer's user manual, for the duration of testing. If disabling is not possible, the energy use associated with such network functions should not be reported to DOE and will not be used to determine compliance with DOE energy conservation standards. The clock display must be on, regardless of manufacturer's instructions or default setting or supplied setting. The clock display must remain on during testing, unless the clock display powers down automatically with no option for the consumer to override this function. Install a watt meter in the circuit that meets the requirements of section 2.8.1.2 of this appendix.

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2.2.2 *Gas supply.*

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3.2.1.2 *Conventional cooking top standby mode and off mode power except for any conventional cooking top component of a combined cooking product.* Make measurements as specified in section 3.1.1.1 of this appendix. If the conventional cooking top is capable of operating in inactive mode, as defined in section 1.14 of this appendix, measure the average inactive mode power of the conventional cooking top, P_{IA}, in watts as specified in section 3.1.1.1.1 of this appendix. If the conventional cooking top is

capable of operating in off mode, as defined in section 1.17 of this appendix, measure the average off mode power of the conventional cooking top, P_{OM}, in watts as specified in section 3.1.1.1.2 of this appendix.

3.2.2 *Combined cooking product standby mode and off mode power.* Make measurements as specified in section 3.1.2 of this appendix. If the combined cooking product is capable of operating in inactive mode, as defined in section 1.14 of this appendix, measure the average inactive mode power of the combined cooking product, P_{IA}, in watts as specified in section 3.1.2.1 of this appendix. If the combined cooking product is capable of operating in off mode, as defined in section 1.17 of this appendix, measure the average off mode power of the combined cooking product, P_{OM}, in watts as specified in section 3.1.2.2 of this appendix.

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