[6450-01-P]

DEPARTMENT OF ENERGY

10 CFR Parts 429 and 430

[EERE-2017-BT-TP-0004]

Energy Conservation Program: Test Procedures for Consumer Refrigerators, Refrigerator-Freezers, and Freezers

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

ACTION: Request for information ("RFI").

SUMMARY: The U.S. Department of Energy ("DOE") is initiating a data collection process through this request for information to consider whether to amend DOE's test procedures for consumer refrigerators, refrigerator-freezers, and freezers. To inform interested parties and to facilitate this process, DOE has gathered data, identifying several issues associated with the currently applicable test procedures on which DOE is interested in receiving comment. The issues outlined in this document mainly concern testing products with newly-available features, the inclusion of automatic icemaker energy use, built-in product test configuration, any issues with the current test procedure that need to be addressed, and any additional topics that may inform DOE's decisions in a future test procedure rulemaking, including methods to reduce regulatory burden while ensuring the procedure's accuracy. DOE welcomes written comments

from the public on any subject within the scope of this document (including topics not raised in this request for information).

DATES: Written comments and information are requested and will be accepted on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

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-0004, by any of the following methods:

- Federal eRulemaking Portal: http://www.regulations.gov. Follow the instructions for submitting comments.
- E-mail: to ConsumerRefrigFreezer2017TP0004@ee.doe.gov. Include the docket number EERE-2017-BT-TP-0004 in the subject line of the message.
- 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) 586-6636. If possible, please submit all items on a compact disc (CD), in which case it is not necessary to include printed copies.
- Hand Delivery/Courier: Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, 950 L'Enfant Plaza, SW., 6th Floor, Washington, DC, 20024. Telephone: (202) 586-6636. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

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

Docket: The docket for this activity, which includes Federal Register notices, comments, and other supporting documents/materials, is available for review at 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 http://www.regulations.gov/#!docketDetail;D=EERE-2017-BT-TP-0004. The docket web page will contain simple instructions on how to access all documents, including public comments, in the docket. See section III 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-5B, 1000 Independence Avenue, SW, Washington, DC, 20585-0121. Telephone: (202) 287-1943. E-mail: ApplianceStandardsQuestions@ee.doe.gov.

Mr. Michael Kido, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue, SW, Washington, DC 20585-0121. Telephone: (202) 586-8145. E-mail: Michael.Kido@hq.doe.gov.

For further information on how to submit a comment, review other public comments and the docket, or participate in the public meeting, contact the Appliance and Equipment Standards Program staff at (202) 586-6636 or by e-mail: ApplianceStandardsQuestions@ee.doe.gov.

SUPPLEMENTARY INFORMATION:

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I. Introduction

Consumer refrigerators, refrigerator-freezers, and freezers 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)(1)) DOE's test procedures for consumer refrigerators, refrigerator-freezers, and freezers are prescribed at title 10 of the Code of Federal Regulations ("CFR") part 430, subpart B, appendices A and B ("Appendices A and B"). The following sections discuss DOE's authority to establish and amend test procedures for consumer refrigerators, refrigerator-freezers, and freezers, as well as relevant background information regarding DOE's consideration of test procedures for these products.

A. Authority and Background

The Energy Policy and Conservation Act of 1975 ("EPCA" or "the Act"),[1] Public Law 94-163 (42 U.S.C. 6311–6317, as codified), among other things, authorizes DOE to regulate the energy efficiency of a number of consumer products and industrial equipment. 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 consumer refrigerators, refrigerator-freezers, and freezers, the subject of this request for information (RFI). (42 U.S.C. 6292(a)(1))

Under EPCA, DOE's energy conservation program consists essentially of four parts: (1) testing, (2) labeling, (3) Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of the Act specifically include definitions (42 U.S.C. 6291), 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).

Federal energy efficiency requirements for covered products established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (See 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. 6316(b)(2)(D))

[1] All references to EPCA in this document refer to the statute as amended through the Energy Efficiency Improvement Act of 2015 (EEIA 2015), Public Law 114–11 (April 30, 2015).
[2] For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.

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

Under 42 U.S.C. 6293, EPCA sets forth the criteria and procedures DOE must follow when prescribing or amending test procedures for covered products. EPCA requires that any test procedures prescribed or amended under this section be reasonably designed to produce test results which measure energy efficiency, energy use or estimated annual operating cost of a covered product during a representative average use cycle or period of use and not be unduly burdensome to conduct. (42 U.S.C. 6293(b)(3))

In addition, if DOE determines that a test procedure amendment is warranted, it must publish proposed test procedures and offer the public an opportunity to present oral and written comments 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 consumer refrigerators, refrigerator-freezers, and freezers, to determine whether amended test procedures would more accurately or fully comply with the requirements for the test procedures to not 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. (42 U.S.C. 6293(b)(1)(A)) If amended test procedures are appropriate, DOE must publish a final rule to incorporate the amendments. 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 RFI to collect data and information to inform a potential test procedure rulemaking to satisfy the 7-year review requirement specified in EPCA, which requires that DOE publish, by April 21, 2021, either a final rule amending the test procedures or a determination that amended test procedures are not required. (42 U.S.C. 6293(b)(1)(A))

B. Rulemaking History

DOE's current test procedures for refrigerators, refrigerator-freezers, and freezers are the result of numerous evolutionary steps taken since DOE initially established its test procedures for these products in a final rule published in the Federal Register on September 14, 1977. 42 FR 46140. Industry representatives viewed these original test procedures as too complex and eventually developed alternative test procedures in conjunction with the Association of Home Appliance Manufacturers (AHAM) that were incorporated into the 1979 version of HRF-1, "Household Refrigerators, Combination Refrigerator-Freezers, and Household Freezers" (HRF-1-1979). Using this industry-created test procedure, DOE revised its test procedures on August 10, 1982. 47 FR 34517.

On August 31, 1989, DOE amended the test procedure further when it published a final rule establishing test procedures for variable-defrost control refrigeration products, dual-compressor refrigerator-freezers, and freezers equipped with "quick-freeze." 54 FR 36238.

DOE amended the test procedures again on March 7, 2003, by modifying the test period used for products equipped with long-time automatic defrost or variable defrost. 68 FR 10957.

On December 16, 2010, DOE made its most recent significant modifications to the test procedures when it published a final and interim final rule establishing the test procedures in Appendices A and B. 75 FR 78810. That rule established a number of comprehensive changes to help improve the measurement of energy consumption of refrigerators, refrigerator-freezers, and freezers. These changes included, among other things: (1) adjusting the standardized compartment temperatures and volume-adjustment factors, (2) adding new methods for measuring compartment volumes, (3) modifying the long-time automatic defrost test procedure to measure all energy use associated with the defrost function, and (4) adding test procedures for products with a single compressor and multiple evaporators with separate active defrost cycles. Lastly, the interim final rule addressed icemaking energy use by including a fixed energy use adder for those products equipped with an automatic icemaker. Using available data submitted by the industry, this value was set at 84 kilowatt-hours (kWh) per year. Id. On January 25, 2012, DOE finalized the test procedures established in the interim final rule and incorporated additional amendments to improve test accuracy. 77 FR 3559.

On July 10, 2013, DOE proposed further amending the consumer refrigerator and refrigerator-freezer test procedure to address products with multiple compressors and to allow an alternative method for measuring and calculating energy consumption for refrigerator-freezers and refrigerators with freezer compartments. 78 FR 41610 ("2013 NOPR"). DOE also proposed to amend certain aspects of the consumer refrigerator, refrigerator-freezer, and freezer test procedures to ensure better accuracy and repeatability. Additionally, DOE solicited comment on a proposed automatic icemaker test procedure and on whether built-in products should be tested

in a built-in configuration. Id. In response to the 2013 NOPR, interested parties requested that DOE grant more time to respond to the proposal for measuring energy use associated with icemaking and to DOE's request for comment regarding testing of built-in products in a built-in configuration. DOE granted the comment period extension request for these two topics. 78 FR 53374 (Aug. 29, 2013).

On April 21, 2014, DOE published a final rule for the refrigerator, refrigerator-freezer, and freezer test procedures (the "2014 final rule"). 79 FR 22320. The amendments enacted by the 2014 final rule addressed products with multiple compressors and established an alternative method for measuring and calculating energy consumption for refrigerator-freezers and refrigerators with freezer compartments. The 2014 final rule also amended certain aspects of the test procedures to improve test accuracy and repeatability. To allow time to review comments and data received during the comment period extension, DOE did not address automatic ice making energy use or built-in testing configuration in the 2014 final rule. Id.

On July 18, 2016, DOE published a final rule that established coverage and test procedures for a variety of refrigeration products collectively described as "miscellaneous refrigeration products" ("MREFs"). 81 FR 46768. Included within this category are refrigeration products that include one or more compartments that maintain higher temperatures than typical refrigerator compartments, such as wine chillers and beverage coolers. Additionally, the final rule amended Appendices A and B to include provisions for testing MREFs and to improve the clarity of certain existing test requirements. Id.

II. Request for Information and Comments

In the following sections, DOE has identified a variety of issues on which it seeks input to aid in the development of the technical and economic analyses regarding whether amended test procedures for consumer refrigerators, refrigerator-freezers, and freezers may be warranted. Specifically, DOE is requesting comment on any opportunities to streamline and simplify testing requirements for refrigerators, refrigerator-freezers, and freezers.

Additionally, DOE welcomes comments on other issues relevant to the conduct of this rulemaking that may not specifically be identified in this document. In particular, DOE notes that under Executive Order 13771, executive branch agencies such as DOE are directed to manage the costs associated with the imposition of expenditures required to comply with Federal regulations. See 82 FR 9339 (Feb. 3, 2017) (Executive Order 13771 "Reducing Regulation and Controlling Regulatory Costs"). Pursuant to that executive order, DOE encourages the public to provide input on measures DOE could take to lower the cost of its regulations applicable to consumer refrigerators, refrigerator-freezers, and freezers consistent with the requirements of EPCA.

A. Features

1. Door-in-Door Designs

DOE's test procedures for refrigerators, refrigerator-freezers, and freezers are intended to represent operation in typical room conditions with door openings by testing at an elevated ambient temperature with no door openings. 10 CFR 430.23(a)(7). The increased thermal load from the elevated ambient temperature is intended to represent the thermal load that would be associated with both door openings as cool cabinet air mixes with warmer ambient air and the loading of warmer items in the cabinet.

DOE is aware of certain products available on the market that incorporate a door-in-door design. This feature allows the consumer to access items loaded in the door shelves without opening an interior door that encloses the inner cabinet. This feature prevents the majority of the cool cabinet air from escaping to the room and being replaced by warmer ambient air, as would be the case during a typical total door opening.

Because the DOE test procedure requires testing with the cabinet doors remaining closed, it would not reflect the potential energy savings associated with door-in-door features during typical consumer operation with door openings.

DOE requests comment on test methods for products with door-in-door designs that will yield accurate and repeatable results. Specifically, DOE seeks information on whether an alternate test method is appropriate or whether potential energy savings may be addressed with a calculation approach. DOE also seeks information regarding what steps, if any, manufacturers are taking to account for the energy use characteristics of products that use door-in-door designs. Further, DOE requests data, if any, on consumer use of the door-in-door feature, including how often the outer door is used in comparison to a total door opening, and the corresponding energy impacts of each type of door opening.

2. Display Screens and Connected Functions

Many refrigerators, refrigerator-freezers, and freezers currently available on the market include user control panels or displays located on the front of the product. These features, which

can control the products' function and provide additional user features, such as television or internet access, operate with many different control schemes, including activation by proximity sensors.

The DOE test procedure, by referencing AHAM's 2008 version of "Energy and Internal Volume of Refrigerating Appliances" (HRF-1-2008), requires testing with customer-accessible features, not required for normal operation, which are electrically powered, manually initiated, and manually terminated, set at their lowest energy usage positions when adjustment is provided.

However, by testing in this manner (i.e., setting consumer features in their lowest energy positions), the resulting measurements may not accurately represent actual consumer use. DOE requests information on how consumers typically use exterior display screens and control panels, when available. While any information would be welcome, DOE is particularly interested in any survey data that may yield insight into the manner and frequency with which consumers use these features. Additionally, DOE requests detailed feedback on the appropriate energy-related settings to use for these types of features during testing to best represent consumer use.

Similarly, many products incorporating these more advanced user interfaces include internet connections to allow for additional functions. The product controls may consume different amounts of energy depending on whether the internet connection is enabled or disabled, and if enabled, whether it is connected to a network. DOE requests information (such as survey data) on whether consumers typically use an internet connection, when available, for refrigerators, refrigerator-freezers, and freezers. DOE also requests information on the potential

energy impacts of the refrigeration products equipped with a connected configuration, and on the appropriate energy-related settings to use for testing.

B. Icemaking Energy Consumption

In 2010, DOE initiated a test procedure rulemaking to help address a variety of test procedure-related issues, including energy use associated with automatic icemaking. On May 27, 2010, DOE published a NOPR (the "2010 NOPR") proposing to use a fixed value of 84 kWh per year to represent the energy use associated with automatic icemaking. 75 FR 29824. The 2010 NOPR also indicated that DOE would consider adopting an approach based on testing to determine icemaking energy use if a suitable test procedure could be developed. Id. at 29846–29847. A broad group of interested parties submitted a joint comment supporting DOE's proposal to use a temporary fixed placeholder value to represent the energy use of automatic icemakers. The joint commenters also urged DOE to initiate a rulemaking no later than January 1, 2012, and publish a final rule no later than December 31, 2012, to amend the test procedures to incorporate a laboratory-based measurement of icemaking energy use. (Test Procedure for Refrigerators, Refrigerator-Freezers, and Freezers, Docket Number EERE–2009–BT–TP–0003; Joint Comment, No. 20 at pp. 5–6)

In January 2012, AHAM provided DOE with a draft test procedure that could be used to measure automatic icemaker energy usage. (AHAM Refrigerator, Refrigerator-Freezer and Freezer Ice Making Energy Test Procedure, Revision 1.0—12/14/11, No. 4)[3] AHAM then submitted a revised automatic icemaker test procedure on July 18, 2012. (AHAM Refrigerator,

[3] Document No. 4 in Docket No. EERE–2012– BT–TP-0016, available for review at www.regulations.gov.

Refrigerator-Freezer and Freezer Ice Making Energy Test Procedure, Revision 2.0—7/10/12, No. 5)[4] In the subsequent 2013 NOPR, as mentioned in section I.B of this document, DOE proposed a method for measuring the energy usage associated with automatic icemaking based on the revised approach submitted by AHAM. See generally 78 FR at 41618–41629. In response to the 2013 NOPR, AHAM submitted comments to DOE requesting that DOE grant its members more time to respond to the automatic icemaker testing proposal, which DOE granted. 78 FR 53374 (Aug. 29, 2013). In the 2014 final rule, DOE established the fixed value adder approach and stated that it would review comments received during the comment period extension to address the icemaking test procedure issue in a future notice. See 79 FR 22341–22342.

A number of interested parties supported the development and adoption of a test procedure that measures the energy use of automatic icemaking. These commenters cited a number of reasons to justify a laboratory-based icemaker energy test procedure, including: (1) a direct laboratory test is more accurate and representative of actual icemaking energy use, and (2) the fixed adder approach would not reward improvements in icemaking efficiency or provide incentives to reduce icemaker energy consumption. (BSH Home Appliances Corporation, No. 21 at p. 1;[5] Joint Commenters,[6] No. 42 at pp. 1–5; Samsung Electronics America, Inc., No. 39 at p. 2)

[4] Document No. 5 in Docket No. EERE–2012– BT–TP-0016, available for review at www.regulations.gov.
[5] A notation in the form "BSH Home Appliances Corporation, No. 21 at p. 1" identifies a written comment: (1) made by BSH Home Appliances Corporation; (2) recorded in document number 21 that is filed in the docket of the test procedure rulemaking (Docket No. EERE–2009–BT–TP–0003) and available for review at www.regulations.gov; and (3) which appears on page 1 of document number 21.
[6] "Joint Commenters" refers to the Appliance Standards Awareness Project, American Council for an Energy-Efficient Economy, Consumer Federation of America, National Consumer Law Center, and Natural Resources Defense Council.

Other interested parties supported the adder approach, noting the significant test burden associated with the proposed icemaking test procedure and the limited opportunities to reduce icemaking energy consumption. (AHAM, No. 37 at p. 2–5; GE Appliances, No. 40 at p. 5; Sub-Zero Group, Inc., No. 36 at p. 2) Further, DOE received data indicating that consumers likely use less ice than assumed in calculating the 84 kWh/year adder. Interested parties commented that the updated consumer use data supported an adder as low as 28 kWh/year. (AHAM, No. 37 at pp. 2–6; GE Appliances, No. 40 at pp. 2–4; Northwest Energy Efficiency Alliance and Northwest Power & Conservation Council, No. 41 at p. 2)

DOE welcomes additional feedback from interested parties on the most appropriate approach to account for icemaker energy use. DOE also requests any more recent consumer use data, if available, regarding ice consumption and automatic icemaker usage in consumer refrigerator-freezers and freezers. DOE also seeks input regarding whether retention of the current fixed adder approach should continue or whether an actual test procedure should replace it at this time. If DOE were to adopt a test procedure that measures icemaker energy use, DOE seeks input on which one to use, for example, the test proposed in the 2013 NOPR, and what specific technical issues it needs to consider if it were to propose such a rule for adoption. To this end, DOE is also interested in what impacts, if any, the adoption of an icemaking energy measurement test procedure would have on the measured energy use of a given product when compared to the fixed energy value adder approach used in the current test procedure.

DOE is also aware of consumer products available on the market that use two automatic icemakers. Typically, these products are refrigerator-freezers with bottom-mounted freezers, with an icemaker in the freezer compartment and another contained in the through-the-door ice

service in the fresh food compartment. The fresh food icemaker serves more frequent through-the-door ice service, while the freezer icemaker serves as an in-freezer storage container for infrequent bulk ice use.

DOE requests information on whether products with multiple automatic icemakers should be tested differently than the more typical single automatic icemaker models – and if so, how. DOE seeks consumer use data for these products to inform whether a different energy use adder or test procedure would be appropriate for these dual-icemaker products.

C. Built-In Test Configuration

In the 2013 NOPR, DOE presented data indicating that testing in a built-in enclosure may affect energy consumption for certain configurations of built-in products. Specifically, those products that reject condenser heat at the back of the unit showed a potential increase in energy use when tested in an enclosure. DOE observed no significant change in energy use associated with the test configuration for those products that reject heat from the front of the unit. DOE requested comment on the appropriate test configuration for built-in refrigerators, refrigerator-freezers, and freezers. 78 FR 46149–46150. Similar to the icemaking test issue, DOE provided additional time to comment on the built-in testing issue prior to the 2014 final rule, but did not address the issue in that rule.

In the rulemaking leading to the 2014 final rule, DOE received multiple comments. Some commenters supported testing built-in products in an enclosure, as this would represent how the products are used in the field. (Joint Commenters, No. 42 at pp. 5–6; Northwest Energy Efficiency Alliance and Northwest Power & Conservation Council, No. 41 at p. 4) Others

opposed the enclosure approach, noting the significant increase in test burden with little or no corresponding change in measured energy consumption. These interested parties also noted that for the products showing a difference in measured energy use between the freestanding and enclosure setups, the enclosure configuration that DOE used (based on Underwriters Laboratories (UL) 250, "Household Refrigerators and Freezers") was not necessarily consistent with manufacturer installation instructions. (AHAM, No. 37 at pp. 16–17; BSH Home Appliances Corporation, No. 21 at p. 1; Liebherr-Canada, Ltd., No. 34 at pp. 1–4; Sub-Zero Group, Inc., No. 36 at p. 2)

DOE continues to seek comment on the built-in testing issue, including consumer installation, test burden, and energy impacts. Among the issues of interest to DOE include whether testing a product in its built-in condition would generally be more representative of energy consumption of a product during its average use cycle or period of use and, if so, the extent to which testing in this condition would be expected to affect the measured energy use of these products, if any. DOE requests information on whether testing all built-in products in an enclosure is appropriate, or whether testing in an enclosure would affect the test results only for certain built-in product configurations, such as those that exhaust condenser heat from the rear of the product. DOE is also interested in detailed information on whether there would be a significant additional test burden resulting from a requirement that specifies these products be tested in a built-in condition – and if so, the nature and extent of that burden. Additionally, DOE is interested in whether alternative methods of assessing the energy consumption of built-in products during their average use cycle or period of use, such as through a calculation or adder approach, are feasible – and if so, what likely degree of accuracy could be obtained if such

methods were used in lieu of testing in a built-in condition.

D. Test Procedure Clarifications

1. Thermocouple Configuration for Freezer Drawers

As discussed in section II.A.2 of this document, Appendices A and B incorporate by reference portions of HRF-1-2008 for testing requirements. Section 5.5.5.5 of HRF-1-2008 includes figures specifying thermocouple placement for a number of example fresh food and freezer compartment configurations. HRF-1-2008 also notes that in situations where the interior of a cabinet does not conform to the configurations shown in the example figures, measurements must be taken at locations chosen to represent approximately the entire cabinet.

HRF-1-2008 provides a specific thermocouple location diagram for freezer compartments in refrigerator-freezers (type 6 in Figure 5-2). However, the diagram for this configuration is based on an upright, front-opening freezer compartment, and does not explicitly address drawer-type freezer compartments. Based on its experience testing these products at third-party test laboratories, DOE understands there may be confusion over which thermocouple layout is appropriate for drawer-type freezer compartments in refrigerator-freezers. DOE believes that sensor layout type 6 is appropriate for testing drawer freezer compartments in refrigerator-freezers. DOE requests feedback on whether this sensor layout or, alternatively, a different thermocouple configuration set forth in HRF-1-2008 or elsewhere, is appropriate for testing drawer freezer compartments.

2. Definitions

As discussed in the recent MREF test procedure final rule, DOE's test procedures in Appendices A and B frequently use the term "compartment" despite that term not being defined. While DOE considered the need for clarifying that term, it did not define it in that final rule. See 81 FR 46779.

DOE is aware of only one specific definition for "compartment" in finalized international or industry test procedures -- specifically, Australian/New Zealand testing standard AS/NZS 4474.1-2007. This procedure define a compartment as "an enclosed space within a refrigerating appliance, which is directly accessible through one or more external doors. A compartment may contain one or more sub-compartments and one or more convenience features." AS/NZS 4474.1-2007 further defines a "sub-compartment" as "a permanent enclosed space within a compartment or sub-compartment which is designated as being a different type of food storage space (i.e., has a different compartment temperature range) from the compartment or sub-compartment within which it is located," and "convenience features," as enclosures or containers with temperature conditions which may or may not be different from the compartment within which they are located.

However, DOE notes that the AS/NZS 4474.1-2007 approach is not fully consistent with all of the uses of the term "compartment" currently found in the DOE test procedures. In some cases, the term denotes all of the space within a refrigeration product that operates within a designated temperature range. In other cases, the term refers to specific enclosed spaces that operate within a designated temperature range. For example, Appendix A, section 5.1.3 uses the

term in both ways, referring to individual fresh food compartment temperatures and volumes to calculate the overall fresh food compartment temperature.

DOE requests information on whether the clarity of Appendices A and B would be improved by defining the term "compartment" and using the term consistently throughout the test procedures. If DOE were to define the term "compartment," DOE seeks comment on what that definition should be – and whether a definition such as the one included in AS/NZS 4474.1-2007 would be sufficient to clearly define this term.

DOE also notes that while Appendix A defines "cooler compartment," it does not directly define related terms such as "fresh food compartment" or "freezer compartment" – although these definitions are in HFR-1-2008, which is incorporated by reference into Appendices A and B. 10 CFR 430.3. DOE requests comment on whether it should directly define these terms in Appendix A – and if so, how?

DOE also welcomes feedback on the definitions of "refrigerators," "refrigerator-freezers," and "freezers" in 10 CFR 430.2. These definitions were most recently amended in DOE's final rule establishing coverage and test procedures for MREFs. 81 FR 46768. Prior to that final rule, DOE published a supplemental noticed of proposed determination ("SNOPD") in which it proposed to amend these definitions. In that SNOPD, DOE noted that the refrigerator and refrigerator-freezer product definitions described a freezer compartment as a compartment designed for the freezing and storage of food at temperatures below 8 °F which may be adjusted by the user to a temperature of 0 °F or below, and proposed to amend the definitions to refer to a compartment capable of maintaining compartment temperatures of 0 °F or below. 81 FR 11454,

11460 (March 4, 2016). However, because interested parties commented that the proposed amendments may affect the scope of the existing refrigerator, refrigerator-freezer, and freezer definitions (AHAM, MREF Coverage No. 24 at pp. 2–3;[7] Sub Zero, MREF Coverage No. 22 at pp. 1–2), DOE did not adopt these proposed modifications to the amended definitions. See 81 FR 46777.

The proposed amendments would have resolved an inconsistency between the definitions and the standardized compartment temperature specified in the test procedure. Specifically, while the 8 °F threshold for freezer compartments in the definitions for refrigerators and refrigerator-freezers is consistent with the fresh food compartment and freezer compartment definitions included in HRF-1-2008, Appendix A requires that freezer compartments in refrigerator-freezers be tested to a standardized compartment temperature of 0 °F. Under the existing requirements, a product would meet the refrigerator-freezer definition but would not receive an energy use rating under Appendix A if the freezer compartment is capable of achieving a temperature below 8 °F but above 0 °F.

DOE requests feedback on whether it should address this potential definitional and testing issue, and if so, how. DOE also seeks information on how to best harmonize the refrigerator and refrigerator-freezer definitions with any potential updates to the fresh food and freezer compartment definitions.

[7] A notation in the form "AHAM, MREF Coverage No. 24 at pp. 2–3" identifies a written comment: (1) made by the Association of Home Appliance Manufacturers; (2) recorded in document number 24 that is filed in the docket of the MREF coverage determination rulemaking (Docket No. EERE-2011-BT-DET-0072-0024) and available for review at www.regulations.gov; and (3) which appears on pages 2–3 of document number 24.

E. AHAM HRF-1 Standard

As discussed in section II.A.2 of this document, the DOE test procedures incorporate by reference certain sections of the AHAM industry standard HRF-1-2008. DOE references HRF-1-2008 for definitions, installation and operating conditions, temperature measurements, and volume measurements. In August 2016, AHAM released an updated version of the HRF-1 standard, HRF-1-2016. Based on review of the newer standard, DOE notes that the majority of the updates from the 2008 standard are clarifications or other revisions that harmonize with DOE's test procedures. Accordingly, DOE does not expect that updating its references to HRF-1-2016 would substantively affect the test procedures in Appendices A and B.

DOE requests feedback on whether its test procedures should incorporate by reference certain sections of the most current version of HRF-1, HRF-1-2016, rather than HRF-1-2008. DOE also requests whether any of the revisions between HRF-1-2008 and HRF-1-2016 would substantively affect the requirements currently incorporated by reference in Appendices A and B – and if so, how?

F. Other Test Procedure Topics

In addition to the issues identified earlier in this document, DOE welcomes comment on any other aspect of the existing test procedures for refrigerators, refrigerator-freezers, and freezers not already addressed by the specific areas identified in this document. DOE particularly seeks information that would improve the repeatability, reproducibility, and consumer representativeness of the test procedures. DOE also requests 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 also requests feedback on any potential amendments to the existing test procedure that could be considered to address impacts on manufacturers, including small businesses. Regarding the Federal test method, DOE seeks comment on the degree to which the DOE test procedure should consider and be harmonized with the most recent relevant industry standards for consumer refrigerators, freezers, and refrigerator-freezers and whether there are any changes to the Federal test method that would provide additional benefits to the public.

Additionally, DOE requests comment on whether the existing test procedures limit manufacturer's ability to provide additional features to consumers on refrigerators, refrigerator-freezers, and freezers. DOE particularly seeks information on how the test procedures could be amended to reduce the cost of these new or additional features and make it more likely that such features are included on consumer refrigerators, freezers, and refrigerator-freezers.

III. Submission of Comments

DOE invites all interested parties to submit in writing by [**INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER***], comments and information on matters addressed in this notice and on other matters relevant to DOE's consideration of amended test procedures for refrigerators, refrigerator-freezers, and freezers. After the close of the comment period, DOE will begin collecting data, conducting analyses, and reviewing the public comments, as needed. These actions will be taken to aid in the development of a test procedure NOPR for refrigerators, refrigerator-freezers, and freezers if

DOE determines that amended test procedures may be appropriate for these products.

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 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.

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

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

DOE considers public participation to be a very important part of the process for developing test procedures and energy conservation standards. DOE actively encourages the participation and interaction of the public during the comment period in each stage of the rulemaking process. Interactions with and between members of the public provide a balanced discussion of the issues and assist DOE in the rulemaking process. Anyone who wishes to be added to the DOE mailing list to receive future notices and information about this rulemaking should contact Appliance and Equipment Standards Program staff at (202) 586-6636 or via e-mail at ApplianceStandardsQuestions@ee.doe.gov.

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Energy Efficiency and Renewable Energy