6450-01-P

DEPARTMENT OF ENERGY

[Case Number 2021-004; EERE-2021-BT-WAV-0009]

Energy Conservation Program: Decision and Order Granting a Waiver to GE Appliances, a Haier Company, from the Department of Energy Miscellaneous Refrigeration Products Test Procedure

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

ACTION: Notification of decision and order.

SUMMARY: The U.S. Department of Energy ("DOE") gives notification of a Decision and Order (Case Number 2021-004) that grants to GE Appliances, a Haier Company ("GEA") a waiver from specified portions of the DOE test procedure for determining the energy consumption of a specified miscellaneous refrigeration product. Under the Decision and Order, GEA is required to test and rate the specified basic model of its product in accordance with the alternate test procedure set forth in the Decision and Order.

DATES: The Decision and Order is effective on **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**. The Decision and Order will terminate upon the compliance date of any future amendment to the test procedure for miscellaneous refrigeration products located at title 10 of the Code of Federal Regulations ("CFR"), part 430, subpart B, appendix A that addresses the issues presented in this waiver. At such time, GEA must use the relevant test procedure for this product for any testing to demonstrate compliance with the applicable standards, and any other representations of energy use.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION:

In accordance with section 430.27(f)(2) of title 10 of the Code of Federal Regulations (10 CFR 430.27(f)(2)), DOE gives notification of the issuance of its Decision and Order as set forth in this document. The Decision and Order grants GEA a waiver from the applicable test procedure at 10 CFR part 430, subpart B, appendix A for the specific basic model for which GEA petitioned for waiver, designated "S-IGH-R" and described as an "In-Home Grower", and provides that GEA must test and rate the product using the alternate test procedure specified in the Decision and Order. GEA's representations concerning the energy consumption of the specified basic models must be based on testing according to the provisions and restrictions in the alternate test procedure set forth in the Decision and Order, and the representations must fairly disclose the test results. Distributors, retailers, and private labelers are held to the same requirements when making representations regarding the energy consumption of the product. (42 U.S.C. 6293(c))

Consistent with 10 CFR 430.27(j), not later than [**INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER***], any manufacturer currently distributing in commerce in the United States products employing a technology or characteristic that results in the same need for a waiver from the applicable test procedure must submit a petition for waiver. Manufacturers not currently distributing such products in commerce in the United States must petition for and be granted a waiver prior to the distribution in commerce of those products in the United States. 10 CFR 430.27(j). Manufacturers may also submit a request for interim waiver pursuant to the requirements of 10 CFR 430.27.

Case # 2021-004
Decision and Order

I. Background and Authority

The Energy Policy and Conservation Act, as amended ("EPCA"),[1] authorizes the U.S. Department of Energy ("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, in addition to identifying particular types of consumer products and commercial equipment as covered under the statute, permits the Secretary of Energy to classify additional types of consumer products as covered products. (42 U.S.C. 6292(a)(20)) DOE added miscellaneous refrigeration products ("MREFs") as covered products through a final determination of coverage published in the *Federal Register* on July 18, 2016. 81 FR 46768.

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), test procedures (42 U.S.C. 6293), labeling provisions (42 U.S.C. 6294), energy conservation standards (42 U.S.C. 6295), and the authority to require information and reports from manufacturers (42 U.S.C. 6296).

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

[1] All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Pub. L. 116-260 (Dec. 27, 2020).
[2] For editorial reasons, upon codification in the U.S. Code, Part B was redesignated as Part A.

applicable energy conservation standards adopted pursuant to EPCA (42 U.S.C. 6295(s)), and (2) making representations about the efficiency of that product (42 U.S.C. 6293(c)). Similarly, DOE must use these test procedures to determine whether the product complies 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 is required to follow when prescribing or amending test procedures for covered products. EPCA requires that any test procedures prescribed or amended under this section must be reasonably designed to produce test results which reflect energy efficiency, energy use or estimated annual operating cost of a covered product during a representative average use cycle or period of use and requires that test procedures not be unduly burdensome to conduct. (42 U.S.C.6293(b)(3)) The test procedure for MREFs is set forth in the Code of Federal Regulations ("CFR") at 10 CFR part 430, subpart B, appendix A, "Uniform Test Method for Measuring the Energy Consumption of Refrigerators, Refrigerator-Freezers, and Miscellaneous Refrigeration Products" ("appendix A" or "MREF test procedure" for the purposes of this document).

Any interested person may submit a petition for waiver from DOE's test procedure requirements. 10 CFR 430.27(a)(1). DOE will grant a waiver from the test procedure requirements if DOE determines either that the basic model for which the waiver was requested contains a design characteristic that prevents testing of the basic model according to the prescribed test procedures, or that the prescribed test procedures evaluate the basic model in a manner so unrepresentative of its true energy consumption characteristics as to provide materially inaccurate comparative data. 10 CFR 430.27(f)(2). DOE may grant the waiver subject to conditions, including adherence to alternate test procedures. *Id*.

As soon as practicable after the granting of any waiver, DOE will publish in the *Federal Register* a notice of proposed rulemaking to amend its regulations so as to eliminate any need for the continuation of such waiver. 10 CFR 430.27(l). As soon thereafter as practicable, DOE will publish in the *Federal Register* a final rule to that effect. *Id*. When DOE amends the test procedure to address the issues presented in a waiver, the waiver will automatically terminate on the date on which use of that test procedure is required to demonstrate compliance. 10 CFR 430.27(h)(3).

II. GEA's April 2021 Petition for Waiver and Interim Waiver

On April 9, 2021, DOE received from GEA a petition for waiver and interim waiver from the MREF test procedure. (GEA, No.1 at p. 1)[3] Pursuant to 10 CFR 430.27(e)(i), DOE posted the petition on the DOE website at: *www.energy.gov/eere/buildings/current-test-procedure-waivers*.[4]

The petition addressed GEA's In-Home Grower, a product with lighting, temperature, humidity, and nutrient water control that allows the user to grow plants within their home year-round. GEA stated that the average compartment temperatures of the In-Home Grower exceed the 55 °F standardized temperature required for testing under the existing DOE test procedure (*see* section 3.2 of appendix A) and, therefore, the product cannot be tested using the existing test procedure. GEA also described characteristics of this basic model that GEA stated would prevent the use of certain test setup, stabilization, temperature control, and energy use determination

[3] A notation in this form provides a reference for information that is in the docket for this test procedure waiver (Docket No. EERE–2021–BT–WAV–0009) (available at *www.regulations.gov/docket/EERE-2021-BT-WAV-0009*). This notation indicates that the statement preceding the reference is document number 1 in the docket and appears at page 1 of that document.

[4] The petition did not identify any of the information contained therein as confidential business information.

requirements in appendix A. (GEA, No. 1 at pp. 3–4) GEA subsequently submitted additional correspondence to DOE in support of its petition on April 26, 2021[5] and on June 2, 2021.[6]

On July 7, 2021, DOE published a notification of petition for waiver and denial of an interim waiver for the alternative test approach described by GEA in its April 26, 2021, correspondence. 86 FR 35766 ("July 2021 Notification of Petition for Waiver"). In the July 2021 Notification of Petition for Waiver, DOE acknowledged that, based upon GEA's petition, absent an interim waiver, GEA's In-Home Grower cannot be tested and rated for energy consumption according to the MREF test procedure on a basis representative of its true energy consumption characteristics. *Id.* at 86 FR 35768. However, DOE tentatively determined that GEA's proposed alternative test procedure would not result in a measurement of the energy use of the basic model that is representative of an average use cycle or period of use, and therefore the petition for waiver was unlikely to be granted as submitted. *Id.* Specifically, DOE determined that the requested test approach to isolate the refrigeration system energy consumption would not provide a representative measurement of energy use for the basic model during an average use cycle or period of use. *Id.* at 86 FR 35770. DOE requested comment on all aspects of the petition, including the suggested alternate test procedure and calculation methodology. *Id.*

In response to the July 2021 Notification of Petition for Waiver, GEA submitted a comment stating that while it believed the alternate test procedure it had proposed would appropriately measure the energy consumption of its In-Home Grower, GEA proposed to use a different alternate test procedure that would measure all energy consumed by the product when tested under normal operating conditions. (GEA, No. 5 at pp. 1–2).

III. November 2021 Notice of Petition for Waiver

[5] This document can be found in the docket for this test procedure waiver under Document No. 002.
[6] This document can be found in the docket for this test procedure waiver under Document No. 003.

On September 17, 2021, GEA submitted to DOE a new petition for waiver ("September 2021 petition for waiver") for the same basic model with a revised alternate test approach.[7] GEA requested to waive the current test procedure, calculations, and accompanying conditions for testing coolers as specified in section 6.2.2 of appendix A.[8] GEA asserted that the In-Home Grower is fundamentally different from all other known miscellaneous refrigeration products. The primary assertion of the petition was that the basic model for which the waiver was requested contains design characteristics that prevent testing of the basic model according to the prescribed MREF test procedure. GEA stated that the In-Home Grower, when tested at its coldest setting in a 90 °F ambient temperature, cannot achieve the 55 °F standardized temperature required for the MREF test procedure (see section 3.2 of appendix A as it appeared in September 2021). GEA stated that its testing in a 90 °F ambient condition resulted in compartment temperatures of 79.90 °F and 79.97 °F.

The DOE test procedure at appendix A simulates typical room conditions (72 °F) with door openings, by testing at 90 °F without door openings. 10 CFR 430.23(ff)(7). The test procedure directly measures the energy consumed during steady-state operation and defrosts, if applicable. Additionally, the DOE test procedure incorporates correction factors to account for differences in these user-related thermal loads for different types of consumer refrigeration products (*i.e.*, MREFs are typically used less frequently than a primary refrigerator-freezer in a household and thus have a correction factor of 0.55). See, for example for automatic defrost models, section 5.2.1.1 of appendix A as it appeared in September 2021.[9]

[7] This document can be found in the docket for this test procedure waiver under Document No. 006.
[8] References to appendix A in GEA's September 2021 petition for waiver refer to appendix A as it appeared in the CFR at the time of GEA's submission. DOE amended appendix A in a final rule published October 12, 2021. Among other amendments, the revised appendix A replaces certain enumerated provisions with incorporation by reference to the updated industry standard Association of Home Appliance Manufacturers ("AHAM") HRF-1-2019, *Energy and Internal Volume of Consumer Refrigeration Products* ("HRF-1-2019").
[9] This corresponds to Section 5.8.2.1.1 of HRF-1-2019, as referenced by the current version of appendix A.

GEA stated in its September 2021 petition for waiver that there is no need to elevate the ambient temperature for the test to account for door openings and loads because the In-Home Grower has a very low number of door openings and, after the initial loading with plants, will typically not have additional loads introduced. GEA sought to waive the requirement for testing the In-Home Grower at a 90 °F ambient condition. See section 2.1.1 of appendix A as it appeared in September 2021. GEA instead requested to test the In-Home Grower in a 72 °F ambient condition, which it asserted better represents typical use of the product. GEA further stated that testing at a 72 °F ambient with the product temperature set to 60 °F (the minimum temperature set point) yields compartment temperatures between 59.15 and 61.41 °F. GEA also sought to waive the requirement in section 6.2.2 of appendix A as it appeared in September 2021[10] that performance be calculated at a standardized compartment temperature of 55 °F, since the In-home Grower is not capable of maintaining the 55 °F standardized compartment temperature. Instead, GEA requested that the model be tested in the 72 °F ambient condition using default settings.

Additionally, GEA sought to waive the existing DOE test procedure requirement to measure the internal compartment temperatures of the unit under test. See section 5.1 of appendix A as it appeared in September 2021.[11] GEA claimed that the rotation of the compartments significantly increases the test burden of temperature measurements, as the thermocouple wires would require a customized testing setup to avoid tangling of the wires and movement of the temperature masses. Under GEA's requested approach, compartment temperature measurements would not be necessary because no interpolation would be made to reflect performance at the standardized 55 °F compartment temperature. (GEA, No. 6 at p. 4)

[10] This corresponds to Section 5.9.5 of HRF-1-2019, as referenced by the current version of appendix A.
[11] This corresponds to Section 5.5.6 of HRF-1-2019, as referenced by the current version of appendix A.

GEA also sought to waive the stabilization and test period requirements specified in sections 2.9 and 4 of appendix A as it appeared in September 2021, respectively.[12] Specifically, GEA requested an 8-hour stabilization period (the duration of each rotation) and 24-hour test period (the duration of one full rotation) based on the rotation of the internal compartments, rather than based on compressor cycling as specified in appendix A. (*Id.*)

GEA's requested alternate test procedure addressed the test procedure requirements to be waived as discussed in the previous paragraphs. GEA's requested approach also included additional test instructions regarding setup and control settings instructions.

Because the In-Home Grower supplies water and nutrients to plants during normal operation, GEA's suggested alternate test procedure provided instructions for filling nutrient tanks with ambient-temperature water prior to the start of the test.

The proposed alternate test approach also provided instructions for product settings, as the suggested test procedure would not be based on the product maintaining compartment temperature to the 55 °F standardized compartment temperature specified in appendix A. Specifically, GEA requested that the In-Home Grower be controlled via use of an application on a connected device and that the product be operated using default settings.

In summary, GEA's suggested alternate test procedure would measure the daily energy consumption of the basic model by providing:

(1) Directions for filling the nutrient water tanks with water at ambient temperature;

[12] These sections correspond to Sections 3.28 and 5.7 of HRF-1-2019 as referenced by the current version of appendix A.

(2) A specific stabilization period of 8 hours (in place of the requirements of section 2.9 of appendix A as it appeared in September 2021);

(3) A specific test period of 24 hours (in place of the test period described in section 4.1 of appendix A as it appeared in September 2021);

(4) An ambient test condition of 72 °F (in place of the requirement in section 2.1.1 of appendix A as it appeared in September 2021);

(5) That no compartment temperature measurements be taken during the test (in place of the requirements in section 5.1 of appendix A as it appeared in September 2021); and

(6) That the product be controlled using an application from a connected device and operated using default settings. (GEA, No. 6 at p. 6)

On November 16, 2021, DOE published a notification that announced its receipt of the petition for waiver. 86 FR 63350 ("November 2021 Notification of Petition for Waiver"). In the November 2021 Notification of Petition for Waiver, DOE described GEA's September 2021 petition for waiver and the suggested alternate test procedure. Further, DOE explained that it considers the In-Home Grower to meet the definition of a cooler in 10 CFR 430.2, but that it tentatively determined that the cooler energy conservation standards would not be applicable to the product.

In the November 2021 Notification of Petition for Waiver, DOE also solicited comments from interested parties on all aspects of the petition and the specified alternate test procedure and on DOE's tentative conclusion that the In-Home Grower, while being a cooler, would not be subject to cooler energy conservation standards due to its unique characteristics. 86 FR 63533-63534. DOE received no comments in response to the November 2021 Notification of Petition for Waiver.

For the reasons explained here and in the November 2021 Notification of Petition for Waiver, absent a waiver, the basic model identified by GEA in its petition cannot be tested and rated for energy consumption on a basis representative of its true energy consumption characteristics. DOE has reviewed the recommended procedure suggested by GEA and concludes that it will allow for the accurate measurement of the energy use of the product, while alleviating the testing problems associated with GEA's implementation of DOE's applicable MREF test procedure for the specified basic models.

Thus, DOE is requiring that GEA test and rate specified MREF basic model according to the alternate test procedure specified in this Decision and Order. Additionally, DOE has determined that while the In-Home Grower basic model meets the cooler definition, it is not subject to the cooler energy conservation standards because of its unique characteristics, as discussed in the November 2021 Notification of Petition for Waiver (see 86 FR at 633543-4).

IV. Consultations with Other Agencies

In accordance with 10 CFR 430.27(f)(2), DOE consulted with the Federal Trade Commission staff concerning the GEA petition for waiver.

V. Order

After careful consideration of all the material that was submitted by GEA, in this matter, it is **ORDERED** that:

(1) GEA must, as of the date of publication of this Order in the *Federal Register*, test and rate the following MREF basic model with the alternate test procedure as set forth in paragraph (2):

Brand	Basic Model
Profile	S-IHG-R

(2) The alternate test procedure for the GEA basic model listed in paragraph (1) of this Order is the test procedure for MREFs prescribed by DOE at 10 CFR part 430, subpart B, appendix A, with the modifications provided below. All other requirements of appendix A and DOE's other relevant regulations remain applicable.

Replace section 5.1.(f) of appendix A with modified section (f). Also add new sections 5.1.(g), 5.1.(h), 5.2.(c), 5.2.(d), and 5.3.(g). The revised and new sections shall read as follows.

5.1. Test Setup and Test Conditions

* * * * *

(f) For a compartment with an internal rotating assembly, section 5.5.6 “Temperature Measurement” of HRF-1-2019 is not applicable and no compartment temperature measurements are required.

(g) For in-home plant grower products with nutrient water tank(s), fill the tank(s) to maximum fill levels with water at 72 ºF+/-5 ºF prior to start of the stabilization period.

(h) For in-home plant grower products, the ambient temperature shall be 72 +/- 1 ºF during the stabilization and test periods.

5.2 Test Conduct

* * * * *

(c) For a compartment with an internal rotating assembly, testing shall be conducted using default temperature settings as described in product installation instructions or in a product control application on a connected device, in lieu of the temperature settings

specified in Table 1 of this section. For such compartments, only a first test using the default setting is required.

(d) For in-home plant grower products without defrost, the test period shall be a 24-hour period following an 8-hour stabilization period.

5.3. Test Cycle Energy Calculations

* * * * *

(g) For plant grower products tested using the test period defined in section 5.2.(d) of this appendix, the test cycle energy shall be calculated as:

$$E = \frac{1440 \times EP}{T}$$

Where:

E = total per-cycle energy consumption in kilowatt-hours per day;

1440 = conversion factor to adjust to a 24-hour average use cycle in minutes per day;

EP = energy expended in kilowatt-hours during the test;

T = test period duration in minutes.

(3) *Representations*. GEA may not make representations about the energy use of a basic model listed in paragraph (1) of this Order for compliance or marketing, unless the basic model has been tested in accordance with the provisions set forth above and such representations fairly disclose the results of such testing.

(4) This waiver shall remain in effect according to the provisions of 10 CFR 430.27.

(5) DOE issues this waiver on the condition that the statements, representations, and information provided by GEA are valid. If GEA makes any modifications to the controls or configurations of these basic models, such modifications will render the waiver invalid with respect to that basic

model, and GEA will either be required to use the current Federal test method or submit a new application for a test procedure waiver. DOE may rescind or modify this waiver at any time if it determines the factual basis underlying the petition for waiver is incorrect, or the results from the alternate test procedure are unrepresentative of a basic model's true energy consumption characteristics. 10 CFR 430.27(k)(1). Likewise, GEA may request that DOE rescind or modify the waiver if GEA discovers an error in the information provided to DOE as part of its petition, determines that the waiver is no longer needed, or for other appropriate reasons. 10 CFR 430.27(k)(2).

(6) GEA remains obligated to fulfill any applicable requirements set forth at 10 CFR part 429.

DOE makes decisions on waivers and interim waivers for only those basic models specifically set out in the petition, not future models that may be manufactured by the petitioner. GEA may submit a new or amended petition for waiver and request for grant of interim waiver, as appropriate, for additional basic models of the In-Home Grower. Alternatively, if appropriate, GEA may request that DOE extend the scope of a waiver or an interim waiver to include additional basic models employing the same technology as the basic model(s) set forth in the original petition consistent with 10 CFR 430.27(g).

Signing Authority

This document of the Department of Energy was signed on October 4, 2022, by Francisco Alejandro Moreno, Acting Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the *Federal Register*.

Signed in Washington, DC, on October 12, 2022.

Treena V. Garrett,
Federal Register Liaison Officer,
U.S. Department of Energy.

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