[6450-01-P]

DEPARTMENT OF ENERGY

Office of Energy Efficiency and Renewable Energy

[Case Number CAC-051]

Notice of Decision and Order Granting a Waiver to Johnson Controls, Inc. from the Department of Energy Central Air Conditioners and Heat Pumps Test Procedure

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

ACTION: Notice of decision and order.

SUMMARY: This notice announces a Decision and Order granting Johnson Controls, Inc. ("JCI") a waiver from specified portions of the DOE test procedure for determining the efficiency of specified central air conditioners ("CAC") and heat pump ("HP") basic models. JCI is required to test and rate the specified CAC and HP basic models in accordance with the alternate test procedure described in the Decision and Order.

DATES: The Decision and Order is effective as of **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**.

FOR FURTHER INFORMATION CONTACT:

Ms. Lucy deButts, 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) 287-1604. E-mail: *AS_Waiver_Requests@ee.doe.gov*.

Mr. Pete Cochran, U.S. Department of Energy, Office of the General Counsel, Mail Stop GC-33, Forrestal Building, 1000 Independence Avenue SW., Washington, DC 20585-0103. Telephone: (202) 586-9496. Email: *Peter.Cochran@hq.doe.gov*.

SUPPLEMENTARY INFORMATION:

On May 2, 2017, JCI originally filed a petition for waiver and an application for interim waiver from the applicable CAC and HP test procedure set forth in Appendix M and subsequently amended its petition once in May and again in June. On September 20, 2017, DOE published a notice announcing its receipt of the petition for waiver and also granting JCI an interim waiver. 82 FR 43952. In that notice, DOE also solicited comments from interested parties on all aspects of the petition and specified an alternate test procedure that must be followed for testing and certifying the specific basic models for which JCI requested a waiver. *Id*.

On **[INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*]**, DOE publishes this notice announcing a Decision and Order regarding JCI's petition. This notice includes a copy of the Decision and Order, with information JCI marked as confidential business information redacted, DOE issued to JCI.

Issued in Washington, DC, on March 9, 2018.

Kathleen B. Hogan, Ph.D.
Deputy Assistant Secretary for Energy Efficiency
Energy Efficiency and Renewable Energy

Case #CAC-051
Decision and Order

I. Background and Authority

The Energy Policy and Conservation Act of 1975, as amended ("EPCA" or "the Act"),[1] Public Law 94-163 (42 U.S.C. 6291–6317, 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, a program that includes the CACs and HPs which are the subject of this Order. (42 U.S.C. 6292(a)(3)) 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.

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 product complies with the 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))

[1] All references to EPCA in this document refer to the statute as amended through the EPS Improvement Act of 2017, Public Law 115–115 (January 12, 2018).
[2] For editorial reasons, upon codification in the U.S. Code, Part B was redesignated as Part A.

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 test procedures prescribed or amended under this section must be reasonably designed to produce test results which reflect the energy efficiency, energy use or estimated annual operating cost of covered products 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 currently applicable CAC and HP test procedure is contained in the Code of Federal Regulations (CFR) at 10 CFR part 430, subpart B, appendix M, "Uniform Test Method for Measuring the Energy Consumption of Central Air Conditioners and Heat Pumps" ("Appendix M").

Under 10 CFR 430.27, any interested person may submit a petition for waiver from DOE's test procedure requirements. DOE will grant a waiver from the test procedure requirements if DOE determines either that the basic models for which the waiver was requested contain a design characteristic that prevents testing of the basic models according to the prescribed test procedures, or that the prescribed test procedures evaluate the basic models in a manner so unrepresentative of their true energy or water 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.*

II. Petition for Waiver: Assertions and Determinations

On May 17, 2017, JCI filed a petition for waiver and an application for interim waiver from the applicable CAC and HP test procedure set forth in Appendix M.[3] On June 2, 2017, JCI supplemented its petition with additional information. According to JCI, testing its CAC and HP basic models that use variable-speed, oil-injected scroll compressors (VSS systems) with only a 20-hour break-in period produces results unrepresentative of their true energy consumption characteristics, and would provide materially inaccurate comparative data. JCI requested that in lieu of the 20-hour break-in limit, it be permitted to test its VSS systems with a 72-hour break-in period. Consequently, JCI seeks a waiver from DOE to permit it to use an alternate test procedure to test and rate specific CAC and HP basic models, which increases the break-in time limit stipulated in section 3.1.7 of Appendix M.

JCI submitted data indicating that the VSS system basic models specified in the petition have compressors that may require more than the 20 hours of break-in time allowed by the DOE test procedure. The purpose of the DOE break in period is to represent the wearing process that smooths out irregularities in the mating surfaces of the compressor. These irregularities can increase friction between mating surfaces and/or result in reduced refrigerant mass flow, both of which would reduce compressor and in turn, overall product efficiency. The majority of the operational life of the compressor occurs after this wearing process. Hence, testing after a sufficient break in period is more representative of field performance. Based on data submitted on the issue and facts presented as a record of DOE's central air conditioner and heat pump test procedure rulemaking to date, DOE determined that a 20 hour break in period is appropriate for

[3] JCI originally submitted a petition for waiver and application for an interim waiver dated May 2, 2017, which was superseded by the corrected petition for waiver and application for interim waiver dated May 17, 2017. These documents along with supporting materials and comments can be reviewed at: *https://www.regulations.gov/document?D=EERE-2017-BT-WAV-0037-0001*.

central air-conditioners and heat pumps. 77 FR 28928, 28944 (May 16, 2012). Specifically, stakeholders commented that a break-in period of 16 to 20 hours would generally be appropriate for testing of commercial air-conditioners with capacity less than 65,000 Btu/h. 77 FR 28928, 28943. However, in the basic models specified by JCI in its petition, the oil injected into the oil-injected scroll compressors increases the coverage of the viscous oil layer between mating surfaces of the scroll. This is presumably its purpose, *i.e.*, to provide additional sealing in the gaps of the mating surfaces to improve compressor volumetric efficiency (relationship between displacement rate and volume flow rate of refrigerant drawn into the compressor). By enhancing this oil layer, the direct contact between irregularities in the surfaces is reduced. The reduction in direct contact slows the wearing process that smooths out these irregularities. Thus, the 20-hour break-in period may not allow for sufficient smoothing of irregularities that reduce compressor efficiency and would result in an efficiency measurement that is unrepresentative of actual field use. Hence a longer break-in period would be appropriate for these products.

On September 20, 2017, DOE published a notice announcing its receipt of the petition for waiver and also granting JCI an interim waiver. 82 FR 43952. In that notice DOE also solicited comments from interested parties on all aspects of the petition and specified an alternate test procedure that must be followed for testing and certifying the specific basic models for which JCI requested a waiver. *Id*. Following close of the comment period, DOE received a comment from Goodman Global, Inc. (a member of the Daikin Group) that was supportive of DOE granting the waiver.[4] DOE did not receive any other comments relevant to this petition.[5]

[4] Goodman's comment can be accessed at: *https://www.regulations.gov/docket?D=EERE-2017-BT-WAV-0037*.
[5] One comment was received from a party identified as Anonymous regarding air emissions.

Based on the information provided by JCI, DOE has determined that the current test procedure at Appendix M would evaluate the specified CAC and HP basic models in a manner so unrepresentative of their true energy consumption characteristics as to provide materially inaccurate comparative data. Therefore, in the Decision and Order, DOE is requiring that JCI test and rate the CAC and HP basic models for which it has requested a waiver according to the alternate test procedure specified in the Decision and Order, which is identical to the procedure provided in the interim waiver.

In its petition JCI sought a test procedure waiver for certain models. The Decision and Order is applicable only to the basic models listed within it and does not extend to any other basic models.

Consistent with 10 CFR 430.27(j), not later than 60 days after **[INSERT 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. Manufacturers may also submit a request for interim waiver pursuant to the requirements of 10 CFR 430.27.

III. Consultations with Other Agencies

In accordance with 10 CFR 430.27(f)(2), DOE consulted with the Federal Trade Commission ("FTC") staff concerning JCI's petition for waiver. The FTC staff did not have any objections to granting the waiver to JCI.

IV. Order

After careful consideration of all the material that was submitted by JCI in this matter, DOE grants a waiver regarding the below specified basic models. Therefore, in accordance with 10 CFR 430.27, it is **ORDERED** that:

(1) JCI must test and rate the CAC and HP basic models listed in paragraph (1)(A) that use the variable-speed, oil-injected scroll compressors that are listed in paragraph (1)(B) with the alternate test procedure set forth in paragraph (2).

(A) JCI basic models that include all combinations of the following outdoor unit models, listed by brand name:

	Brand				
	York	Coleman	Luxaire	Fraser-Johnston	Champion
Air Conditioners	YXV24B21	AC21B2421	AL21B2421	AL21B2421	AL21B2421
	YXV36B21	AC21B3621	AL21B3621	AL21B3621	AL21B3621
	YXV48B21	AC2134821	AL21B4821	AL21B4821	AL21B4821
	YXV60B21	AC21B6021	AL21B6021	AL21B6021	AL21B6021
Heat Pumps	YZV24B21	HC20B2421	HL20B2421	HL20B2421	HL20B2421
	YZV36B21	HC20B3621	HL20B3621	HL20B3621	HL20B3621
	YZV48B21	HC20B4821	HL20B4821	HL20B4821	HL20B4821
	YZV60B21	HC20B6021	HL20B6021	HL20B6021	HL20B6021

(B) Variable-speed, oil-injected scroll compressor models that are [Redacted] brand products manufactured by [Redacted], listed by model number: [Redacted]

(2) The alternate test procedure for the JCI basic models listed in paragraph (1)(A) having one of the compressors listed in paragraph (1)(B) is the test procedure for CACs and HPs prescribed by DOE at 10 CFR part 430, subpart B, appendix M, except that under section 3.1.7 of appendix M the break-in period maximum of 20 hours is increased to 72 hours, reading as follows:

3.1.7 *Test Sequence*

Manufacturers may optionally operate the equipment under test for a "break-in" period, not to exceed 72 hours, prior to conducting the test method specified in this section. A manufacturer who elects to use this optional compressor break-in period in its certification testing should record this information (including the duration) in the test data underlying the certified ratings that are required to be maintained under 10 CFR 429.71. When testing a ducted unit (except if a heating- only heat pump), conduct the A or A2 Test first to establish the cooling full-load air volume rate. For ducted heat pumps where the heating and cooling full-load air volume rates are different, make the first heating mode test one that requires the heating full-load air volume rate. For ducted heating-only heat pumps, conduct the H1 or H12 Test first to establish the heating full-load air volume rate. When conducting a cyclic test, always conduct it immediately after the steady-state test that requires the same test conditions. For variable-speed systems, the first test using the cooling minimum air volume rate should precede the EV Test, and the first test using the heating minimum air volume rate must precede the H2V Test. The test laboratory makes all other decisions on the test sequence.

(3) *Representations*. JCI must make representations about the efficiency of the basic models identified in paragraph (1) for compliance, marketing, or other purposes only to the extent that the basic model has been tested in accordance with the provisions set forth above and such representations fairly disclose the results of such testing in accordance with 10 CFR part 430, subpart B, appendix M and 10 CFR 429.16.

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

(5) This waiver is issued on the condition that the statements, representations, and documentation provided by JCI are valid. If JCI makes any modifications to the controls or configurations of these basic models, the waiver would no longer be valid and JCI would either be required to use the current Federal test method or submit a new application for a test procedure waiver. DOE may revoke 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 the basic models' true energy consumption characteristics. 10 CFR 430.27(k)(1). Likewise, JCI may request that DOE rescind or modify the waiver if JCI 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) Granting of this waiver does not release JCI from the certification requirements set forth at 10 CFR part 429.

Signed in Washington, DC, on March 9, 2018.

Kathleen B. Hogan, Ph.D.
Deputy Assistant Secretary for Energy Efficiency
Energy Efficiency and Renewable Energy