DEPARTMENT OF ENERGY

[Case Number 2019–010; EERE–2019–BT–WAV–0029]

Energy Conservation Program: Notification of Petition for Waiver of Air Innovations From the Department of Energy Walk-In Coolers and Walk-In Freezers Test Procedure and Notification of Grant of Interim Waiver

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

ACTION: Notification of petition for waiver and grant of an interim waiver; request for comments.

SUMMARY: This document announces receipt of and publishes a petition for waiver and interim waiver from Air Innovations, which seeks a waiver for specified walk-in cooler refrigeration system basic models from the U.S. Department of Energy (''DOE'') test procedure used to determine the efficiency and energy consumption of walk-in coolers and walk-in freezers. DOE also gives notice of an Interim Waiver Order that requires Air Innovations to test and rate the specified walk-in cooler refrigeration system basic models in accordance with the alternate test procedure set forth in the Interim Waiver Order, which modifies the alternate test procedure suggested by Air Innovations. DOE solicits comments, data, and information concerning Air Innovations' petition, its suggested alternate test procedure, and the alternate test procedure specified in the Interim Waiver Order so as to inform DOE's final decision on Air Innovations' waiver request.

DATES: The Interim Waiver Order is effective on January 12, 2021. Written comments and information will be accepted on or before February 11, 2021.

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at *http://www.regulations.gov.* Alternatively, interested persons may submit comments, identified by case number ''2019–010'', and Docket number ''EERE–2019–BT–WAV–0029,'' by any of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the instructions for submitting comments.
- *Email: AirInnovations2019WAV0029@ee.doe.gov.* Include Case No. 2019–010 in the subject line of the message.
- *Postal Mail:* Appliance and Equipment Standards Program, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, Mail Stop EE–5B, Petition for Waiver Case No. 2019–010, 1000 Independence Avenue SW, Washington, DC 20585–0121. If possible, please submit all items on a compact disc (''CD''), in which case it is not necessary to include printed copies.
- *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) 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 this process, see the **SUPPLEMENTARY INFORMATION** section of this document.

Docket: The docket, which includes **Federal Register** notices, 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-2019-BT-WAV-0029.* The docket web page contains instruction on how to access all documents, including public comments, in the docket. See the **SUPPLEMENTARY INFORMATION** section for information on how to submit comments through *http://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Ms. Lucy deButts, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, Mailstop EE–5B, 1000 Independence Avenue SW, Washington, DC 20585–0121. Email: *AS_Waiver_Request@ee.doe.gov.*

Mr. Michael Kido, 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) 586–8145. Email: *Michael.Kido@hq.doe.gov@hq.doe.gov.*

SUPPLEMENTARY INFORMATION: DOE is publishing Air Innovations' petition for waiver, pursuant to 10 CFR 431.401(b)(1)(iv), absent information for which the petitioner requested treatment as confidential business information. DOE invites all interested parties to submit in writing by February 11, 2021, comments and information on all aspects of the petition, including the alternate test procedure. Pursuant to 10 CFR 431.401(d), any person submitting written comments to DOE must also send a copy of such comments to the petitioner. The contact information for the petitioner is: Scott Toukatly, *SToukatly@airinnovations.com,* 2301 SW 145th Avenue, Miramar, FL 33027.

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. If this instruction is followed, 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/courier, or postal mail. Comments and documents submitted via email, hand delivery/courier, or postal 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 postal mail or hand delivery/courier, please provide all items on a CD, if feasible, in which case it is not necessary to submit printed copies. Faxes will not 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/courier two well-marked copies: One copy of the document marked ''confidential'' including all the information believed to be confidential, and one copy of the document marked ''non-confidential'' with the information believed to be confidential deleted. Submit these documents via email 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).

Signing Authority

This document of the Department of Energy was signed on January 7, 2021, by Daniel R Simmons, 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 January 7, 2021.

Treena V. Garrett,

Federal Register Liaison Officer, U.S. Department of Energy.

Case Number 2019–010

Interim Waiver 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 C[2] of EPCA, added by the National Energy Conservation Policy Act, Public Law 95–619, sec. 441 (Nov. 9, 1978), established the Energy Conservation Program for Certain Industrial Equipment, which sets forth a variety of provisions designed to improve the energy efficiency for certain types of industrial equipment. Through amendments brought about by the Energy Independence and Security Act of 2007, Public Law 110–140, sec. 312 (Dec. 19, 2007), this equipment includes walk-in coolers and walk-in freezers, the subject of this Interim Waiver Order. (42 U.S.C. 6311(1)(G))

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. 6311), test procedures (42 U.S.C. 6314), labeling provisions (42 U.S.C. 6315), energy conservation standards (42 U.S.C. 6313), and the authority to require information and reports from manufacturers. (42 U.S.C. 6316)

The Federal testing requirements consist of test procedures that manufacturers of covered equipment must use as the basis for: (1) Certifying to DOE that their equipment complies with the applicable energy conservation standards adopted pursuant to EPCA (42 U.S.C. 6316(a); 42 U.S.C. 6295(s)), and (2) making representations about the efficiency of that equipment (42 U.S.C. 6314(d)). Similarly, DOE must use these test procedures to determine whether the equipment complies with relevant standards promulgated under EPCA. (42 U.S.C. 6316(a); 42 U.S.C. 6295(s))

Under 42 U.S.C. 6314, EPCA sets forth the criteria and procedures DOE is required to follow when prescribing or amending test procedures for covered equipment. EPCA requires that any 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 and equipment during a representative average use cycle and requires that test procedures not be unduly burdensome to conduct. (42 U.S.C. 6314(a)(2)) The test procedure used to determine the net capacity and annual walk-in energy factor (''AWEF'') of walk-in cooler and walk-in freezer refrigeration systems is contained in the Code of Federal Regulations (''CFR'') at 10 CFR part 431, subpart R, appendix C, *Uniform Test Method for the Measurement of Net Capacity and AWEF of Walk-in Cooler and Walk-in Freezer Refrigeration Systems* (''Appendix C'').

Under 10 CFR 431.401, 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 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. *See* 10 CFR 431.401(f)(2). A petitioner must include in its petition any alternate test procedures known to the petitioner to evaluate the performance of the

[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 C was redesignated as Part A–1.

equipment type in a manner representative of its energy consumption characteristics of the basic model. *See* 10 CFR 431.401(b)(1)(iii). DOE may grant the waiver subject to conditions, including adherence to alternate test procedures. *See* 10 CFR 431.401(f)(2).

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. *See* 10 CFR 431.401(1). As soon thereafter as practicable, DOE will publish in the **Federal Register** a final rule to that effect. *Id.*

The waiver process also provides that DOE may grant an interim waiver if it appears likely that the underlying petition for waiver will be granted and/or if DOE determines that it would be desirable for public policy reasons to grant immediate relief pending a determination on the underlying petition for waiver. *See* 10 CFR 431.401(e)(2). Within one year of issuance of an interim waiver, DOE will either: (i) Publish in the **Federal Register** a determination on the petition for waiver; or (ii) publish in the **Federal Register** a new or amended test procedure that addresses the issues presented in the waiver. *See* 10 CFR 431.401(h)(1).

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. *See* 10 CFR 431.401(h)(2).

II. Air Innovations' Petition for Waiver and Application for Interim Waiver

On September 23, 2019, DOE received an email from Air Innovations filing a petition for an interim waiver from the test procedure for walk-in cooler and walk-in freezer refrigeration systems set forth at Appendix C (Air Innovations, No. 1 at p. 1 [3]). The waiver process under 10 CFR 431.401 requires that a petitioner must request a waiver for there to be consideration of a petition for an interim waiver. Air Innovations later confirmed in a May 21, 2020 email that the petition should also be considered as a petition for waiver (Air Innovations, No. 4).

The primary assertion in the petition, absent an interim waiver, is that the prescribed test procedure would evaluate the specified basic models in a manner so unrepresentative of their true energy consumption as to provide materially inaccurate comparative data. As presented in Air Innovations' petition, the specified basic models of walk-in cooler refrigeration systems operate at a temperature range of 45–65 °F; higher than that of a typical walk-in cooler refrigeration system. Thus, the 35 °F temperature specified in the DOE test procedure for medium-temperature walk-in refrigeration systems would result in the prescribed test procedures evaluating the specified basic models in a manner so unrepresentative of their true energy consumption characteristics as to provide materially inaccurate comparative data. Air Innovations also states that the specified basic models are ''wine cellar cooling systems'' that operate at temperature and relative humidity ranges optimized for the long-term storage of wine and are usually located in air-conditioned spaces. Air Innovations contends that because of these characteristics, wine cellar walk-in refrigeration systems differ in their walk-in box temperature setpoint, walk-in box relative humidity, low/high load split,[4] and compressor efficiency from other walk-in cooler refrigeration systems.

Air Innovations states that the specified basic models are designed to provide a cold environment at a temperature range between 45–65 °F with 50–70 percent relative humidity (''RH''), and typically are kept at 55 °F and 55 percent RH rather than the 35 °F and <50 percent RH test condition prescribed by the DOE test procedure. The website for Air Innovations' Wine Guardian brand stresses the importance of temperature control for optimum wine storage, and states that the ideal temperature range for wine storage is 55 °F to 57 °F and that the ideal average relative humidity is 60 percent.[5] Further, Air Innovations states that the refrigeration systems are designed solely for the purpose of long-term wine storage to mimic the temperature and humidity of natural caves. Air Innovations also asserts that operating a wine cellar at the 35 °F condition would adversely mechanically alter the intended performance of the system, which would include icing of the evaporator coil that could potentially damage the compressor, and would not result in an accurate representation of the performance of the cooling unit.

Additionally, the Thru-the-wall (TTW009 and TTW018) and Ducted Self-contained (D025, D050, D088, and D200) basic models of walk-in refrigeration systems identified in Air Innovations' waiver petition are single-package systems. Although not explicitly identified by Air Innovations, DOE recognizes that because of their single-package design, these basic models have insufficient space within the units and insufficient lengths of liquid line and evaporator outlet line for the dual mass flow meters and the dual temperature and pressure measurements required by the test procedure's refrigerant enthalpy method. AHRI 1250–2009 does not include specific provisions for testing single-package systems and testing these basic models using the refrigerant enthalpy method as required by Appendix C would require extensive additional piping to route the pipes out of the system where the components can be installed, and then back in.[6] This additional piping would impact unit performance, likely be inconsistent between test labs, and result in unrepresentative test values for the unit under test. AHRI has recently published a revised version of the test standard that provides provisions for single-package systems without requiring extensive additional piping (AHRI 1250–2020, *2020 Standard for Performance Rating of Walk-in Coolers and Freezers*). As discussed below, the interim waiver alternative test procedure presented for comment in this notification adopts the new test methods included in AHRI 1250–2020 for single-package units.

DOE has received multiple requests from wine cellar manufacturers for waiver and interim waiver from Appendix C. In light of these requests,

[3] A notation in the form ''Air Innovations, No. 1'' identifies a written submission: (1) Made by Air Innovations; and (2) recorded in document number 1 that is filed in the docket of this petition for waiver (Docket No. EERE–2019–BT–WAV–0029) and available at *http://www.regulations.gov*.

[4] The DOE test procedure incorporates by reference Air-Conditioning, Heating, and Refrigeration Institute (''AHRI'') Test Standard 1250–2009, ''Standard for Performance Rating of Walk-in Coolers and Freezers'' (including Errata sheet dated December 2015) (''AHRI 1250–2009''). Section 6 of that standard defines walk-in box thermal loads as a function of refrigeration system net capacity for both high-load and low-load periods. The waiver petition asserts that wine cellars do not have distinct high and low load periods, and that the box load levels in the test standard are not representative for wine cellar refrigeration systems.

[5] *https://wineguardian.com/proper-wine-storage-temperature-and-humidity/*.

[6] In a waiver granted to Store It Cold for certain models of single-package units, DOE acknowledged a similar issue in which the additional piping necessary to install the required testing components would affect performance of the units, rendering the results unrepresentative. See 84 FR 39286 (Aug. 9, 2019). In the case of the waiver granted to Store It Cold, the refrigerant enthalpy method yielded inaccurate data for the specified basic models compared to the basic models' true performance characteristics because of the additional piping required to attach the testing components required by the refrigerant enthalpy test. The same issues are present for the specified basic Thru-the-wall and Ducted Self-contained single-package basic models included in Air Innovations' waiver petition.

DOE met with the AHRI and wine cellar walk-in refrigeration system manufacturers to develop a consistent and representative alternate test procedure that would be relevant to each waiver request. Ultimately, AHRI sent a letter to DOE on August 18, 2020, summarizing the industry's position on several issues (''AHRI August 2020 Letter'').[7] This letter documents industry support for specific wine cellar walk-in refrigeration system test procedure requirements, allowing the provisions to apply only to refrigeration systems with a minimum operating temperature of 45 °F, since wine cellar system controls and unit design specifications prevent a temperature below 45 °F. A provision for testing walk-in wine cellar refrigeration systems at an external static pressure (''ESP'')[8] of 50 percent of the maximum ESP to be specified by manufacturers for each basic model (AHRI August 2020 Letter) is also included.

Accordingly, Air Innovations submitted an updated petition for waiver and interim waiver on October 19, 2020 (Air Innovations, No. 6). The updated petition states that all basic models listed in the petition for waiver and interim waiver cannot be operated at a temperature less than 45 °F and provides DOE with maximum ESP values for specified ducted self-contained and ducted split system basic models.[9]

Air Innovations requests an interim waiver from the existing DOE test procedure. DOE will grant an interim waiver if it appears likely that the petition for waiver will be granted, and/or if DOE determines that it would be desirable for public policy reasons to grant immediate relief pending a determination of the petition for waiver. See 10 CFR 431.401(e)(2).

III. Requested Alternate Test Procedure

EPCA requires that manufacturers use the applicable DOE test procedures when making representations about the energy consumption and energy consumption costs of covered equipment. (42 U.S.C. 6314(d)). Consistency is important when making representations about the energy efficiency of products and equipment, including when demonstrating compliance with applicable DOE energy conservation standards. Pursuant to its regulations at 10 CFR 431.401, and after consideration of public comments on the petition, DOE may establish in a subsequent Decision and Order an alternate test procedure for the basic models addressed by the Interim Waiver Order.

Air Innovations seeks to use an approach that would test and rate specific wine cellar walk-in refrigeration system basic models. The company's suggested approach specifies using an air-return temperature of 55 °F, as opposed to the 35 °F requirement prescribed in the current DOE test procedure. Air Innovations also suggests using an air-return relative humidity of 55 percent RH, as opposed to <50 percent RH. Additionally, Air Innovations requests that a correction factor of 0.55 be applied to the final AWEF calculation to account for the different use and load patterns of the specified basic models as compared to walk-in cooler refrigeration systems generally. Air Innovations cited the use of such a correction factor for coolers[10] and combination cooler refrigeration products under DOE's test procedure for miscellaneous refrigeration products at 10 CFR part 430, subpart B, appendix A.

IV. Interim Waiver Order

DOE has reviewed Air Innovations' application, its suggested testing approach, representations of the specified basic models on the website for the Wine Guardian brand, related product catalogs, and information provided by Air Innovations and other wine cellar walk-in refrigeration system manufacturers in meetings with DOE. Based on this review, DOE is granting an interim waiver that requires testing with a modified version of the testing approach suggested by Air Innovations.

The modified testing approach would apply to the models specified in Air Innovations' waiver petition that include two categories of WICF refrigeration systems, *i.e.,* single package and split (matched) systems. The Through-the-wall and Ducted Self-contained Systems are single-package systems. The basic models that are Through-the-wall systems (basic model numbers TTW009 and TTW018) are designed for installation through the wall of a wine cellar, while the basic models that are Ducted Self-contained systems (basic model numbers D025, D050, D088, D200) are designed to be installed remotely from the wine cellar and provide cooling by circulating air through ducts from the wine cellar to the unit and back. The basic models that are Ducted Split Systems (basic model numbers DS025, DS050, DS088, and DS200) and Ductless Split Systems (basic model numbers SS018 CS025, and CS050) are split (matched) systems, in which refrigerant circulates between the ''fan coil'' (unit cooler) portion of the unit and the ''condensing unit''. The refrigerant cools the wine cellar air in the fan coil, while the condensing unit rejects heat from the refrigeration system in a remote location, often outside. The fan coil of the Ducted Split System circulates air through ducts from the wine cellar to the fan coil and back to provide cooling, while the fan coil of the Ductless Split System is installed either partially or entirely in the wine cellar, allowing direct cooling. The capacity range of the specified basic models is from 1,130 Btu/h to 15,000 Btu/h for the specified operating conditions for each of the models.[11]

DOE considers the operating temperature range of the specified basic models to be integral to its analysis of whether such models require a test procedure waiver. Grant of the interim waiver and its alternative test procedure to the specified basic models listed in the petition is based upon the representation by Air Innovations that the operating range for the basic models listed in the interim waiver does not extend below 45 °F.

The alternate test procedure specified in the Interim Waiver Order requires testing the specified basic models according to Appendix C with the following changes. The required alternate test procedure specifies an air entering dry-bulb temperature of 55 °F and a relative humidity of 55 percent. The alternate test procedure also specifies that the capacity measurement for the specified basic models that are

[7] DOE's meetings with Air Innovations and other wine cellar refrigeration systems were conducted consistent with the Department's *ex parte* meeting guidance (74 FR 52795; October 14, 2009). The AHRI August 2020 letter memorializes this communication and is provided in Docket No. EERE- 2019–BT–WAV–0029–0005.

[8] External static pressure is the sum of all the pressure resisting the fans, in this case chiefly the resistance generated by the air moving through ductwork.

[9] Air Innovations' has stated that the maximum ESP values included in their updated petition for waiver are confidential business information. These values have been replaced by ''[ESP REDACTED]'' in the publicly available petition. Further, Air Innovations included a maximum ESP for model TTW018 in a clarifying email on December 18, 2020 (Air Innovations, No. 10). This value has also been replaced by ''[ESP REDACTED]'' in the publicly available version.

[10] A *cooler* is a cabinet, used with one or more doors, that has a source of refrigeration capable of operating on single-phase, alternating current and is capable of maintaining compartment temperatures either: (1) No lower than 39 °F (3.9 °C); or (2) In a range that extends no lower than 37 °F (2.8 °C) but at least as high as 60 °F (15.6 °C). 10 CFR 430.2.

[11] The specified operating conditions vary among the models but are generally 57 °F and 55% relative humidity cold-side air entering conditions and either 75 °F or 80 °F warm-side air entering temperature. An example series of specified models with capacity information based upon these conditions can be found at *https://wineguardian.com/wp-content/uploads/2020/01/Split-System-Datasheet-2020-01-16.pdf.*

single-package systems (*i.e.,* the Thru-the-wall and Ducted Self-contained systems) be conducted using a primary and a secondary capacity measurement method as specified in AHRI 1250–2020, using two of the following: The indoor air enthalpy method; the outdoor air enthalpy method; the compressor calibration method; the indoor room calorimeter method; the outdoor room calorimeter method; or the balanced ambient room calorimeter method.

The required alternate test procedure also includes the following additional modifications to Air Innovations' suggested approach: For systems that can be installed with (1) ducted evaporator air, (2) with or without ducted evaporator air, (3) ducted condenser air, or (4) with or without ducted condenser air, testing would be conducted at 50 percent of the maximum ESP, consistent with the AHRI August 2020 Letter recommendations, subject to a tolerance of −0.00/+0.05 in. wc.[12] DOE understands that maximum ESP is generally not published in available literature such as installation instructions, but manufacturers do generally specify the size and maximum length of ductwork that is acceptable for any given unit in such literature. The duct specifications determine what ESP would be imposed on the unit in field operation.[13] The provision of allowable duct dimensions is more convenient for installers than maximum ESP, since it relieves the installer from having to perform duct pressure drop calculations to determine ESP. DOE independently calculated the maximum pressure drop over a range of common duct roughness values [14] using duct lengths and diameters published in Air Innovations' installation manuals.[15] DOE's calculations show reasonable agreement with the maximum ESP values provided by Air Innovations for the specified basic models. Given that the number and degree of duct bends and duct type will vary by installation, DOE found the maximum ESP values provided by Air Innovations to be sufficiently representative.

Selection of a representative ESP equal to half the maximum ESP is based on the expectation that most installations will require less than the maximum allowable duct length. In the absence of field data, DOE expects that a range of duct lengths from the minimal length to the maximum allowable length would be used; thus, DOE believes that half of the maximum ESP would be representative of most installations. For basic models with condenser or evaporator systems that are not designed for the ducting of air, this design characteristic must be clearly stated.

Additionally, if there are multiple condenser or fan-coil (unit cooler) fan speed settings, the speed setting used would be as instructed in the unit's installation instructions. However, if the installation instructions do not specify a fan speed setting for ducted installation, systems that can be installed with ducts would be tested with the highest available fan speed. The ESP would be set for testing either by symmetrically restricting the outlet duct [16] or, if using the indoor air enthalpy method, by adjusting the airflow measurement apparatus blower.

The alternate test procedure also describes the requirements for measurement of ESP consistent with provisions provided in AHRI 1250–2020 when using the indoor air enthalpy method with unit coolers.

Additionally, the alternate test procedure indicates that specified basic models that are split systems must be tested as matched pairs. According to Air Innovations' petition, the walk-in refrigeration system basic models that are split-systems are sold as full systems (*i.e.,* matched pairs) rather than as individual unit cooler and condensing unit components. This Interim Waiver Order provides no direction regarding refrigerant line connection operating conditions, and as such is inapplicable to testing the basic models as individual components. Consequently, the Interim Waiver Order addresses only matched-pair testing of the specified basic models that are split-systems.

DOE notes that, despite the request from Air Innovations, it is not including a 0.55 correction factor in the alternate test procedure required by the Interim Waiver Order. The company had observed that the test procedure in appendix A to subpart B of 10 CFR part 430 (''Appendix A''), includes such a factor to account for the difference in use and loading patterns of coolers (*e.g.,* self-contained wine chiller cabinets) as compared to other residential refrigeration products and sought to include a factor as part of its petition. Coolers, like other residential refrigeration products, are tested in a 90 °F room without door openings (section 2.1.1 of Appendix A). The intent of the energy test procedure for residential refrigeration products is to simulate operation in typical room conditions (72 °F) with door openings by testing at 90 °F ambient temperature without door openings. 10 CFR 430.23(ff)(7). In section 5.2.1.1 of Appendix A, a correction factor of 0.55 is applied to the measured energy consumption of coolers so that measuring energy consumption at 90 °F ambient temperature without door openings provides test results that are representative of consumer usage at 72 °F ambient temperature with door openings. Specifically, the 0.55 correction factor reflects that (1) closed-door operation of self-contained coolers in typical 72 °F room conditions results in an average energy consumption 0.46 times the value measured at the 90 °F ambient temperature specified by the test procedure; and (2) expected door openings of a self-contained wine chiller would add an additional 20% thermal load. Multiplying 0.46 by 1.2 results in the overall correction factor of 0.55. See 81 FR 46768, 46782 (July 18, 2016) (final rule for miscellaneous refrigeration products).

In contrast, these same closed-door conditions on which the miscellaneous refrigeration correction factor is based are not present in the test procedure for walk-in cooler refrigeration systems. The WICF test procedure does not provide for closed-door testing at elevated ambient temperatures as the test procedure for residential refrigeration products does because walk-ins are tested and rated by component, with a walk-in refrigeration system tested and rated separately from a walk-in enclosure (panels and doors). See 76 FR 21580. Walk-in refrigeration load is set by using a representative ratio of box load to capacity (see discussion below). As a result, applying the 0.55 correction factor as suggested by Air Innovations is not appropriate for the specified basic models.

Further, Air Innovations asserted that the suggested 0.55 correction factor was to address the differences in run time

[12] Inches of water column (''in. wc'') is a unit of pressure conventionally used for measurement of pressure differentials.

[13] The duct material, length, diameter, shape, and configuration are used to calculate the ESP generated in the duct, along with the temperature and flow rate of the air passing through the duct. The conditions during normal operation that result in a maximum ESP are used to calculate the reported maximum ESP values, which are dependent on individual unit design and represent manufacturer-recommended installation and use.

[14] Calculations were conducted over an absolute roughness range of 1.0–4.6 mm for flexible duct as defined in pages 1–2 of an OSTI Journal Article on pressure loss in flexible HVAC ducts at *https://www.osti.gov/servlets/purl/836654* (Docket No. EERE–2019–BT–WAV–0029) and available at *http://www.regulations.gov.*

[15] Duct lengths and diameters can be found in Air Innovations' installation manuals at *http://www.regulations.gov* Docket No. EERE–2019–BT–WAV–0029–0008 and Docket No. EERE–2019–BT–WAV–0029–0009.

[16] This approach is used for testing of furnace fans, as described in Section 8.6.1.1 of 10 CFR part 430, appendix AA to subpart B.

and compressor inefficiency of the specified basic models as compared to walk-in cooler refrigeration systems more generally. It suggested that the run time for wine cellar walk-in refrigeration systems ranges from 50 to 75 percent. AHRI 1250–2009 accounts for percent run time in the AWEF calculation by setting walk-in box load equal to specific fractions of refrigeration system net capacity—the fractions are defined based on whether the refrigeration system is for cooler or freezer applications, and whether it is designed for indoor or outdoor installation (see sections 6.2 (applicable to coolers) and 6.3 (applicable to freezers) of AHRI 1250–2009). The alternate test procedure provided by this interim waiver requires calculating AWEF based on setting the walk-in box load equal to half of the refrigeration system net capacity, without variation according to high and low load periods and without variation with outdoor air temperature for outdoor refrigeration systems. Setting the walk-in box load equal to half the refrigeration system net capacity results in a refrigeration system run time fraction slightly above 50 percent, which is in the range suggested by Air Innovations as being representative for the specified basic models. As previously discussed, walk-in energy consumption is determined by component, with separate test procedures for walk-in refrigeration systems, doors, and panels. Section 6 of AHRI 1250–2009 provides equations for determining refrigeration box load as a function of refrigeration system capacity. Using these equations with an assumed load factor of 50 percent maintains consistency with Appendix C while providing an appropriate load fraction for wine cellar refrigeration systems. Accordingly, DOE has declined to adopt a correction factor for the equipment at issue.

Based on DOE's review of Air Innovations' petition, the required alternate test procedure laid out in the Interim Waiver Order appears to allow for the accurate measurement of energy efficiency of the specified basic models, while alleviating the testing issues associated with Air Innovations' implementation of wine cellar walk-in refrigeration system testing for these basic models. Consequently, DOE has determined that Air Innovations' petition for waiver will likely be granted. Furthermore, DOE has determined that it is desirable for public policy reasons to grant Air Innovations immediate relief pending a determination of the petition for waiver.

For the reasons stated, it is *Ordered* that:

(1) Air Innovations must test and rate the following Air Innovations-branded wine cellar walk-in refrigeration system basic models [17] with the alternate test procedure set forth in paragraph (2).

Through-the-wall	Ducted self-contained	Ducted split system	Ductless split system
TTW018	D025 D050 D088 D0200	DS025 DS050 DS088 DS200	SS018 CS025 CS050

(2) The alternate test procedure for the Air Innovations basic models identified in paragraph (1) of this Interim Waiver Order is the test procedure for Walk-in Cooler Refrigeration Systems prescribed by DOE at 10 CFR part 431, subpart R, appendix C (''Appendix C to Subpart R''), except as detailed below. All other requirements of Appendix C to Subpart R, and DOE's regulations remain applicable.

In Appendix C to Subpart R, revise section 3.1.1 (which specifies modifications to AHRI 1250–2009 (incorporated by reference; see § 431.303)) to read:

3.1.1. In Table 1, Instrumentation Accuracy, refrigerant temperature measurements shall have an accuracy of ±0.5 °F for unit cooler in/out. Measurements used to determine temperature or water vapor content of the air (*i.e.,* wet bulb or dew point) shall be accurate to within ±0.25 °F; all other temperature measurements shall be accurate to within ±1.0 °F.

In Appendix C to Subpart R, revise section 3.1.4 (which specifies modifications to AHRI 1250–2009) and add modifications of AHRI 1250–2009 Tables 3 and 4 to read:

3.1.4. In Tables 3 and 4 of AHRI 1250–2009, Section 5, the Condenser Air Entering Wet-Bulb Temperature requirement applies only to single-packaged dedicated systems. Tables 3 and 4 shall be modified to read:

TABLE 3—FIXED CAPACITY MATCHED REFRIGERATOR SYSTEM AND SINGLE-PACKAGED DEDICATED SYSTEM, CONDENSING UNIT LOCATED INDOOR

Test description	Unit cooler air entering dry-bulb, °F	Unit cooler air entering relative humidity, % [1]	Condenser air entering dry-bulb, °F	Maximum condenser air entering wet-bulb, °F	Compressor status	Test objective
Evaporator Fan Power	55	55	.....	.....	.....	Measure fan input wattage.[2]
Refrigeration Capacity	55	55	90	[3] 65	Compressor On.	Determine Net Refrigeration Capacity of Unit Cooler, input power, and EER at Rating Condition.

[1] The test condition tolerance (maximum permissible variation of the average value of the measurement from the specified test condition) for relative humidity is 3%.

[2] Measure fan input wattage either by measuring total system power when the compressor and condenser are turned off or by separately sub-metering the evaporator fan.

[17] Basic model TTW009 was initially included in Air Innovation's petition, prior to an email submission on December 18, 2020 stating that Air Innovations has decided to discontinue offering model TTW009 (Air Innovations, No. 10).

[3] Maximum allowable value for Single-Packaged Systems that do not use evaporative Dedicated Condensing Units, where all or part of the equipment is located in the outdoor room.

TABLE 4—FIXED CAPACITY MATCHED REFRIGERATOR SYSTEM AND SINGLE-PACKAGED DEDICATED SYSTEM, CONDENSING UNIT LOCATED OUTDOOR

Test description	Unit cooler air entering dry-bulb, °F	Unit cooler air entering relative humidity, % [1]	Condenser air entering dry-bulb, °F	Maximum condenser air entering wet-bulb, °F	Compressor status	Test objective
Evaporator Fan Power	55	55	.....	.....	.....	Measure fan input wattage.[2]
Refrigeration Capacity A	55	55	95	[3] 68	Compressor On.	Determine Net Refrigeration Capacity of Unit Cooler, input power, and EER at Rating Condition.
Refrigeration Capacity B	55	55	59	[3] 46	Compressor On.	Determine Net Refrigeration Capacity of Unit Cooler and system input power at moderate condition.
Refrigeration Capacity C	55	55	35	[3] 29	Compressor On.	Determine Net Refrigeration Capacity of Unit Cooler and system input power at cold condition.

[1] The test condition tolerance (maximum permissible variation of the average value of the measurement from the specified test condition) for relative humidity is 3%.

[2] Measure fan input wattage either by measuring total system power when the compressor and condenser are turned off or by separately sub-metering the evaporator fan.

[3] Maximum allowable value for Single-Packaged Dedicated Systems that do not use evaporative Dedicated Condensing Units, where all or part of the equipment is located in the outdoor room.

In Appendix C to Subpart R, following section 3.2.5 (instructions regarding modifications to AHRI 1250–2009), add sections 3.2.6 and 3.2.7 to read:

3.2.6. The purpose in section C1 of appendix C is modified by extending it to include Single-Packaged Dedicated Systems.

3.2.7. For general test conditions and data recording (appendix C, section C7), the test acceptance criteria in Table 2 and the data to be recorded in Table C2 apply to the Dual Instrumentation and Calibrated Box methods of test.

In Appendix C to Subpart R, revise section 3.3 to read:

3.3. *Matched systems, single-packaged dedicated systems, and unit coolers tested alone:* Test any split system wine cellar walk-in refrigeration system as a matched pair. Any condensing unit or unit cooler component must be matched with a corresponding counterpart for testing. Use the test method in AHRI 1250–2009 (incorporated by reference; see § 431.303), appendix C as the method of test for matched refrigeration systems, single-packaged dedicated systems, or unit coolers tested alone, with the following modifications:

* * * * *

In Appendix C to Subpart R, revise sections 3.3.3 through 3.3.3.2 to read:

3.3.3. *Evaporator fan power.*

3.3.3.1. The unit cooler fan power consumption shall be measured in accordance with the requirements in Section C3.5 of AHRI 1250–2009. This measurement shall be made with the fan operating at full speed, either measuring unit cooler or total system power input upon the completion of the steady state test when the compressors and condenser fan of the walk-in system is turned off, or by submetered measurement of the evaporator fan power during the steady state test.

Section C3.5 of AHRI 1250–2009 is revised to read:

Unit Cooler Fan Power Measurement. The following shall be measured and recorded during a fan power test.

$EF_{comp,on}$ Total electrical power input to fan motor(s) of Unit Cooler, W

FS Fan speed (s), rpm

N Number of motors

P_b Barometric pressure, in. Hg

T_{db} Dry-bulb temperature of air at inlet, °F

T_{wb} Wet-bulb temperature of air at inlet, °F

V Voltage of each phase, V

For a given motor winding configuration, the total power input shall be measured at the highest nameplated voltage. For three-phase power, voltage imbalance shall be no more than 2%.

3.3.3.2. Evaporator fan power for the off cycle is equal to the on-cycle evaporator fan power with a run time of ten percent of the off-cycle time.

$EF_{comp,off} = 0.1 \times EF_{comp,on}$

In Appendix C to Subpart R, following section 3.3.7.2, add new sections 3.3.8, 3.3.9, and 3.3.10 to read:

3.3.8. Measure power and capacity of single-packaged dedicated systems as described in sections C4.1.2 and C9 of AHRI 1250–2020. The third and fourth sentences of Section C9.1.1.1 of AHRI 1250–2020 (''Entering air is to be sufficiently dry as to not produce frost on the Unit Cooler coil. Therefore, only sensible capacity measured by dry bulb change shall be used to calculate capacity.'') shall not apply.

3.3.9. For systems with ducted evaporator air, or that can be installed with or without ducted evaporator air: Connect ductwork on both the inlet and outlet connections and determine external static pressure as described in ASHRAE 37–2009, sections 6.4 and 6.5. Use pressure measurement instrumentation as described in ASHRAE 37–2009 section 5.3.2. Test at the fan speed specified in manufacturer installation instructions—if there is more than one fan speed setting and the installation instructions do not specify which speed to use, test at the highest speed. Conduct tests with the external static pressure equal to 50 percent of the maximum external static pressure allowed by the manufacturer for system installation within a tolerance of −0.00/+0.05 in. wc. If testing with the indoor air enthalpy method, adjust the airflow measurement apparatus fan to set the external static pressure—otherwise, set the external static pressure by symmetrically restricting the outlet of the test duct. In case of conflict, these requirements for setting evaporator

airflow take precedence over airflow values specified in manufacturer installation instructions or product literature.

3.3.10. For systems with ducted condenser air, or that can be installed with or without ducted condenser air: Connect ductwork on both the inlet and outlet connections and determine external static pressure as described in ASHRAE 37–2009, sections 6.4 and 6.5. Use pressure measurement instrumentation as described in ASHRAE 37–2009 section 5.3.2. Test at the fan speed specified in manufacturer installation instructions—if there is more than one fan speed setting and the installation instructions do not specify which speed to use, test at the highest speed. Conduct tests with the external static pressure equal to 50 percent of the maximum external static pressure allowed by the manufacturer for system installation within a tolerance of −0.00/+0.05 in. wc. If testing with the outdoor enthalpy method, adjust the airflow measurement apparatus fan to set the external static pressure—otherwise, set the external static pressure by symmetrically restricting the outlet of the test duct. In case of conflict, these requirements for setting condenser airflow take precedence over airflow values specified in manufacturer installation instructions or product literature. If testing using the outdoor air enthalpy method, the requirements of section 8.6 of ASHRAE 37–2009 are not applicable.

In Appendix C to Subpart R, revise section 3.3.6 (which specifies modifications to AHRI 1250–2009) to read:

3.3.6. AWEF is calculated on the basis that walk-in box load is equal to half of the system net capacity, without variation according to high and low load periods and without variation with outdoor air temperature for outdoor refrigeration systems, and the test must be done as a matched or single-package refrigeration system, as follows:

For Indoor Condensing Units:

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$$\dot{B}L = 0.5 \cdot \dot{q}_{ss}(90\,^{\circ}F)$$

$$LF = \frac{\dot{B}L + 3.412 \cdot \dot{E}F_{comp,off}}{\dot{q}_{ss}(90\,^{\circ}F) + 3.412 \cdot \dot{E}F_{comp,off}}$$

$$AWEF = \frac{\dot{B}L}{\dot{E}_{ss}(90\,^{\circ}F) \cdot LF + \dot{E}F_{comp,off} \cdot (1 - LF)}$$

For Outdoor Condensing Units:

$$\dot{B}L = 0.5 \cdot \dot{q}_{ss}(95\,^{\circ}F)$$

$$LF(t_j) = \frac{\dot{B}L + 3.412 \cdot \dot{E}F_{comp,off}}{\dot{q}_{ss}(t_j) + 3.412 \cdot \dot{E}F_{comp,off}}$$

$$AWEF = \frac{\sum_{j=1}^{n} BL(t_j)}{\sum_{j=1}^{n} E(t_j)}$$

$$BL(t_j) = \dot{B}L \cdot n_j$$

$$E(t_j) = \left[\dot{E}_{ss}(t_j) \cdot LF(t_j) + \dot{E}F_{comp,off} \cdot \left(1 - LF(t_j)\right)\right] \cdot n_j$$

Where: $\dot{B}L$ is the non-equipment-related box load
LF is the load factor
And other symbols are as defined in AHRI 1250-2009.

BILLING CODE 6450–01–C

(3) *Representations.* Air Innovations may not make representations about the efficiency of a basic model listed in paragraph (1) of this Interim Waiver Order for compliance, marketing, or other purposes unless that 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 interim waiver shall remain in effect according to the provisions of 10 CFR 430.401.

(5) This Interim Waiver Order is issued on the condition that the statements and representations provided by Air Innovations are valid. If Air Innovations makes any modifications to the controls or configurations of a basic model subject to this Interim Waiver

Order, such modifications will render the waiver invalid with respect to that basic model, and Air Innovations 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 the Interim Waiver Order is incorrect, or the results from the alternate test procedure are unrepresentative of a basic model's true energy consumption characteristics. 10 CFR 431.401(k)(1). Likewise, Air Innovations may request that DOE rescind or modify the Interim Waiver Order if Air Innovations discovers an error in the information provided to DOE as part of its petition, determines that the interim waiver is no longer needed, or for other appropriate reasons. 10 CFR 431.401(k)(2).

(6) Issuance of this Interim Waiver Order does not release Air Innovations from the certification 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. Air Innovations may submit a new or amended petition for waiver and request for grant of interim waiver, as appropriate, for additional basic models of Walk-in Cooler Refrigeration Systems. Alternatively, if appropriate, Air Innovations 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 431.401(g).

Signed in Washington, DC, on January 7, 2021.

Daniel R Simmons,

Assistant Secretary, Energy Efficiency and Renewable Energy.

Application for Waiver and Interim Waiver

Air Innovations (Wine Guardian Brand) is requesting for a Waiver and Interim Waiver from a DOE test procedure pursuant to provisions described in 10 CFR 431.401 for the following products on the grounds that ''either the basic model contains one or more design characteristics that prevent testing of the basic model according to the prescribed test procedures or 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.''

We ask that you refer to each of these website links to see our products, and their applications

https://wineguardian.com/https://wineguardian.com/wine-cellar-cooling-units/

https://wineguardian.com/wine-cellar-cooling-units/through-the-wall/

https://wineguardian.com/wine-cellar-cooling-units/ducted-wine-cellar-cooling-systems/

https://wineguardian.com/wine-cellar-cooling-units/split-system/

The design characteristics constituting the grounds for the Waiver and Interim Waiver Application:

AHRI 1250–2009 is silent on the definition of single packaged and matched pair refrigeration systems, however, as seen in Section 3.12 of the public comment version of soon to be published revision of AHRI 1250, these type of products are defined as follows:

3.12 Refrigeration System. The mechanism (including all controls and other components integral to the system's operation) used to create the refrigerated environment in the interior of a walk-in cooler or walk-in freezer, consisting of: A Dedicated Condensing Unit; or A Unit Cooler.

3.12.1 Matched Refrigeration System (Matched-pair). A combination of a Dedicated Condensing Unit and one or more Unit Coolers specified by the Dedicated Condensing Unit manufacturer which are all distributed in commerce together. Single-Packaged Dedicated Systems are a subset of Matched Refrigeration Systems.

3.12.2 Single-packaged Refrigeration System (Single-packaged). A Matched Refrigeration System that is a Single-packaged assembly that includes one or more compressors, a condenser, a means for forced circulation of refrigerated air, and elements by which heat is transferred from air to refrigerant, without any element external to the system imposing resistance to flow of the refrigerated air.

SELF-CONTAINED COOLING SYSTEMS FOR WALK-IN WINE CELLARS (refer to single-packaged walk-in cooler refrigeration systems in AHRI 1250)

** All basic models listed in our petition for Waiver and Interim Waiver cannot be operated at a temperature less than 45F.*

- Self-contained cooling systems are designed to provide cold environment between 45~65 °F and maintain relative humidity within the range of 50~70% for properly insulated and sized wine cellars.
- These temperature and relative humidity ranges are optimized for long term storage of wine like that in natural caves.
- These cooling systems are all-in-one ready for use and no more refrigerant piping is required in the field.
- These cooling systems are factory-built, critically charged and tested, and only require through-the-wall installation on walk-in wine cellars in the field.
- These systems are available as indoor or outdoor uses with automatic off-cycle air defrost.
- Wine cellars are usually located in air-conditioned spaces.

SPLIT COOLING SYSTEMS FOR WALK-IN WINE CELLARS (refer to matched-pair walk-in cooler refrigeration systems in AHRI 1250)

** All basic models listed in our petition for Waiver and Interim Waiver cannot be operated at a temperature less than 45F.*

- Split cooling systems are designed to provide cold environment between 45~65 °F and maintain relative humidity range within 50~70% for properly insulated wine cellars.
- These temperature and relative humidity ranges are optimized for long term storage of wine like that in natural caves.
- These cooling systems consist of a remote condensing unit and an evaporator unit, which are connected by a liquid line and an insulated suction line.
- These systems must be charged properly with refrigerant in the field.
- These systems are available as indoor or outdoor uses with automatic off-cycle air defrost.
- Wine cellars are usually located in air-conditioned spaces.
- As opposed to utilize large compressors, large surface area coils, multiple fans, and large volumes of refrigerant, these systems employ fractional compressors and automatic expansion valves to maintain 50~70% relative humidity.

DOE uniform test method for the measurement of energy consumption of walk-in coolers and walk-in freezers (WICF) described in 10 CFR 431.304 adopts the test standard set forth in AHRI 1250–2009. Both 10 CFR 431 and AHRI 1250 define WICF products as ''. . . an enclosed storage space refrigerated to temperatures, respectively, above, and at or below 32 degrees Fahrenheit that can be walked into, and has a total chilled storage area of less than 3,000 square feet. . .'' Walk-in wine cellar cooling systems meet this definition. Therefore, WICF products are subject to the test method and minimum energy requirements as described in 10 CFR 431.401.

AHRI 1250 specifies that for walk-in coolers, the refrigeration system is to be rated at a cooler air-return temperature of 35 °F (box setpoint) than is typically seen in a wine cellar application. Operating a wine cellar at this condition would adversely mechanically alter the intended performance of the system including icing of the evaporator coil, potential damage to the compressor, and will not result in an accurate representation of the performance of the cooling unit. Wine cellars generally are kept at 55 °F, with 55% relative humidity.

The calculation of the Annual Walk-in Energy Factor (AWEF) found in AHRI 1250 accounts for typical usage of WICF products with high and low load periods. Wine cellars see a constant load, no highs or lows, that does not resemble the use patterns that are representative of typical WICF products. Therefore, the AWEF calculation described in 10 CFR 431.304 and AHRI 1250 does not match the applications of wine cellar cooling systems.

The compressors used in wine cellar cooling systems are predominately fractional horsepower, which are inherently less efficient than larger compressors used in walk-in cooler refrigeration systems. Therefore, we do not believe there is technology on the market that will provide the needed energy efficiency in wine cellar cooling systems to meet the minimum AWEF value for commercial walk-in cooler refrigeration systems set forth in 10 CFR 431.306.

The prescribed test procedure is unrepresentative of the products true energy characteristics.

One or more design characteristics that prevent testing of the basic model according to the prescribed test procedures or cause the prescribed test procedures to evaluate the basic model in a manner so unrepresentative of its true energy or water consumption characteristics as to provide materially inaccurate comparative data.

Basic Models on which the Waiver and Interim Waiver is being requested:

Thru-The-Wall (free blow/non-ducted): TTW009, TTW018

Ducted self-contained: D025, [ESP REDACTED]
D050, [ESP REDACTED]
D088, [ESP REDACTED]
D200, [ESP REDACTED]

Ducted Split System: DS025, [ESP REDACTED]
DS050, [ESP REDACTED]
DS088, [ESP REDACTED]
DS200, [ESP REDACTED]

Ductless Split System: SS018, CS025, CS050

Specific Requirements sought to be waived

Petitioning for a Waiver and Interim Waiver to exempt wine cellar walk-in cooler systems from being tested to the current test procedures, specifically the requirement for the refrigeration system to be rated at an air-return temperature of 35 °F.

The petition also includes a correction factor of 0.55 to be applied to final AWEF calculations for wine cellar products to allow the unit to pass minimum efficiency as delineated by 10 CFR 431 subpart R. There is precedent for wine cooling products receiving a correction factor of 0.55 from Appendix A to Subpart B of 10 CFR 430 and DOE Direct Final Rule EERE–2011–BT–STD–0043–0122.

List of manufacturers of all other basic models marketing in the United States and known to the petitioner to incorporate similar design characteristics—

(a) Air Innovations
(b) Bacchus
(c) BreezAire
(d) CellarPro
(e) Vinotemp
(f) WhisperKool

Proposed alternate test procedure:

AHRI 1250 test procedure will be followed, but with the following modifications:

1. Temperature of the air returning to the walk-in cooling unit shall be 55 °F.

2. Relative humidity of the air returning to the walk-in cooling unit shall be 55%RH.

3. The AWEF calculations shall include a correction factor of 0.55 to inflate the final AWEF value for wine-related products to meet minimum efficiency standards.

Technical Justifications for the alternate test procedure:

As discussed previous, the technical justifications summarized for our products are as follows:

- Wine cellar environment is most typically at 55F/55%RH, so the return air to cooling unit is not consistent with what is prescribed in AHRl1250 presently.
- The component technology, specifically fractional HP compressors (reciprocating) are not being optimized for efficiency in the models our product sector dictate.
- Without the .55 correction factor, there is not a means to pass the minimum AWEF efficiency rating for these products. As noted earlier, there is a precedent set for applying this correction factor.
- Pending EPA SNAP regulations yet to be determined on effect for meeting minimum AWEF, as the refrigerant choices for lower GWP and model options available from component manufacturers (compressors, valves, heat exchangers, etc.) may limit ability further to comply with present requirements.

Success of the application for Interim Waiver will:

Success of the application for Interim Waiver will ensure that manufacturers of walk-in wine cellar cooling systems can continue to participate in the market.

What economic hardship and/or competitive disadvantage is likely to result absent a favorable determination on the Application for Interim Waiver:

Economic hardship will be loss of sales due to not meeting the DOE energy conservation standards set forth in 10 CFR 431.306 if the existing products were altered in order to test per current requirements set forth in 10 CFR 431.304 and AHRI 1250, it would add significant cost and increase energy consumption.

Conclusion:

Air Innovations (Wine Guardian Brand) seeks an Interim Waiver from DOE's current test method for the measurement of energy consumption of walk-in wine cellar Self-contained and Split cooling systems.

Respectfully submitted
/s/
Scott R. Toukatly,
Director of Engineering Air Innovations (Wine Guardian brand).

[FR Doc. 2021–00393 Filed 1–11–21; 8:45 am]

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DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. EL21–38–000]

City of Springfield, Illinois, City Water, Light and Power; Notice of Filing

Take notice that on December 31, 2020, The City of Springfield, Illinois, City Water, Light and Power (CWLP), filed its proposed rate schedule, which specified CWLP's cost-based revenue requirements for Reactive Supply and Voltage Control from Generation or other Sources Service supplied by CWLP generating units, pursuant to the Open Access Transmission and Energy Markets Tariff of the Midwest Independent Transmission System Operator, Inc, along with supporting testimony and data.

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of