

## Department of Energy

## § 429.71

or to a basic model with a motor and controller.

(ii) *Apply the AEDM* to the selected basic models. Using the AEDM, calculate the simulated FEI, or efficacy, as applicable, for each of the selected basic models.

(iii) *Testing*. Test a sample of units of each of the selected basic models in accordance with 10 CFR 431.174 and determine the FEI or efficacy, as applicable, in accordance with § 429.69(a)(1) and (b)(1) as applicable.

(iv) *Compare*. The simulated FEI or simulated efficacy, as applicable, for each basic model must be less than or equal to 105 percent of the FEI or efficacy, as applicable, determined in paragraph (n)(2)(iii) of this section through testing.

(v) *Additional AEDM requirements*. When making representations of values other than FEI (e.g., FEP, fan shaft power) or efficacy (as applicable) for a basic model that relies on an AEDM, all other representations are required to be based on the same AEDM results used to generate the represented value of FEI or efficacy.

(3) *Verification of an AEDM*—(i) *Periodic reviews*. Each manufacturer must periodically select basic models representative of those to which it has applied an AEDM. The manufacturer must select a sufficient number of basic models to ensure the AEDM maintains its accuracy and reliability. For each basic model selected for verification: subject at least one unit to testing in accordance with 10 CFR 431.174. The provisions in paragraph (n)(2)(iv) of this section must be met.

(ii) *Inspection records*. Each manufacturer that has used an AEDM under this section must have available for inspection by the Department of Energy records showing:

(A) The method or methods used to develop the AEDM;

(B) The mathematical model, the engineering or statistical analysis, computer simulation or modeling, and other analytic evaluation of performance data on which the AEDM is based;

(C) Complete test data, equipment information, and related information that the manufacturer has generated or acquired pursuant to paragraphs (n)(2) and (3) of this section; and

(D) The calculations used to determine the simulated FEI or simulated weighted-average FEI, as applicable, of each basic model to which the AEDM was applied.

(iii) *Simulations*. If requested by the Department, the manufacturer must:

(A) Conduct simulations to predict the performance of particular basic models of electric motors specified by the Department;

(B) Provide analyses of previous simulations conducted by the manufacturer; and/or

(C) Conduct testing of basic models selected by the Department.

[76 FR 12451, Mar. 7, 2011; 76 FR 24780, May 2, 2011, as amended at 78 FR 79595, Dec. 31, 2013; 79 FR 25505, May 5, 2014; 79 FR 27410, May 13, 2014; 80 FR 152, Jan. 5, 2015; 79 FR 40565, July 11, 2014; 81 FR 4145, Jan. 25, 2016; 81 FR 37054, June 8, 2016; 81 FR 89304, Dec. 9, 2016; 82 FR 1100, Jan. 4, 2017; 82 FR 1475, Jan. 5, 2017; 87 FR 43979, July 22, 2022; 87 FR 45195, July 27, 2022; 87 FR 63649, Oct. 19, 2022; 87 FR 63894, Oct. 20, 2022; 87 FR 77321, Dec. 16, 2022; 88 FR 17973, Mar. 24, 2023; 88 FR 21837 Apr. 11, 2023; 88 FR 27388, May 1, 2023; 88 FR 28835, May 4, 2023; 88 FR 40472, June 21, 2023; 88 FR 53375, Aug. 8, 2023]

### § 429.71 Maintenance of records.

(a) The manufacturer of any covered product or covered equipment shall establish, maintain, and retain the records of certification reports, of the underlying test data for all certification testing, and of any other testing conducted to satisfy the requirements of this part, part 430, and part 431. Any manufacturer who chooses to use an alternative method for determining energy efficiency or energy use in accordance with § 429.70 must retain the records required by that section, any other records of any testing performed to support the use of the alternative method, and any certifications required by that section, on file for review by DOE for two years following the discontinuance of all models or combinations whose ratings were based on the alternative method.

(b) Such records shall be organized and indexed in a fashion that makes them readily accessible for review by DOE upon request.

(c) The records shall be retained by the manufacturer for a period of two

years from the date that the manufacturer or third party submitter has notified DOE that the model has been discontinued in commerce.

(d) When considering if a pump is subject to energy conservation standards under part 431 of this chapter, DOE may need to determine if a pump was designed and constructed to the requirements set forth in Military Specifications: MIL-P-17639F, MIL-P-17881D, MIL-P-17840C, MIL-P-18682D, or MIL-P-18472G. In this case, a manufacturer must provide DOE with copies of the original design and test data that were submitted to appropriate design review agencies, as required by MIL-P-17639F, MIL-P-17881D, MIL-P-17840C, MIL-P-18682D, or MIL-P-18472G. Military specifications and standards are available for review at <http://everyspec.com/MIL-SPECS>.

(e) When considering if a compressor is subject to energy conservation standards under part 431, DOE may need to determine if a compressor was designed and tested to the requirements set forth in the American Petroleum Institute standard 619, “Rotary-Type Positive-Displacement Compressors for Petroleum, Petrochemical, and Natural Gas Industries” (API 619). In this case, DOE may request that a manufacturer provide DOE with copies of the original requirements and test data that were submitted to the purchaser of the compressor, in accordance with API 619.

[76 FR 12451, Mar. 7, 2011, as amended at 81 FR 4145, Jan. 25, 2016; 85 FR 1591, Jan. 10, 2020]

**§ 429.72 Alternative methods for determining non-energy ratings.**

(a) *General.* Where § 429.14 through § 429.562 authorize the use of an alternative method for determining a physical or operating characteristic other than the energy consumption or efficiency, such characteristics must be determined either by testing in accordance with the applicable test procedure and applying the specified sampling plan provisions established in those sections or as described in the appropriate product-specific paragraph below. In all cases, the computer-aided design (CAD) models, measurements, and calculations used to determine the

rating for the physical or operating characteristic shall be retained as part of the test records underlying the certification of the basic model in accordance with § 429.71.

(b) *Testing.* [Reserved]

(c) *Residential refrigerators, refrigerator-freezers, and freezers.* The total refrigerated volume of a basic model of refrigerator, refrigerator-freezer, or freezer may be determined by performing a calculation of the volume based upon computer-aided design (CAD) models of the basic model in lieu of physical measurements of a production unit of the basic model. Any value of total refrigerated volume of a basic model reported to DOE in a certification of compliance in accordance with § 429.14(b)(2) must be calculated using the CAD-derived volume(s) and the applicable provisions in the test procedures in 10 CFR part 430 for measuring volume, and must be within two percent, or 0.5 cubic feet (0.2 cubic feet for compact products), whichever is greater, of the volume of a production unit of the basic model measured in accordance with the applicable test procedure in 10 CFR part 430.

(d) *Miscellaneous refrigeration products.* The total refrigerated volume of a miscellaneous refrigeration product basic model may be determined by performing a calculation of the volume based upon computer-aided design (CAD) models of the basic model in lieu of physical measurements of a production unit of the basic model. Any value of total adjusted volume and value of total refrigerated volume of a basic model reported to DOE in a certification of compliance in accordance with § 429.61(b)(2) must be calculated using the CAD-derived volume(s) and the applicable provisions in the test procedures in part 430 of this chapter for measuring volume. The calculated value must be within two percent, or 0.5 cubic feet (0.2 cubic feet for products with total refrigerated volume less than 7.75 cubic feet (220 liters)), whichever is greater, of the volume of a production unit of the basic model measured in accordance with the applicable test procedure in part 430 of this chapter.

(e) *Commercial gas-fired and oil-fired instantaneous water heaters and hot*