

TABLE 10 TO PARAGRAPH (m)(5)(viii)(A)—Continued

Number of invalid certified ratings from the same AEDM ¹ within a rolling 24-month period ²	Required manufacturer actions
> = 8	<p>Note, the tests required under this paragraph (m)(5)(viii) must be performed on different models than the original tests performed under paragraph (m)(2) of this section.</p> <p>Manufacturer has lost privilege to use AEDM. All ratings for models within the validation classes to which the AEDM applied should be rated via testing. Distribution cannot continue until certification(s) are corrected to reflect actual test data.</p>

¹ The “same AEDM” means a computer simulation or mathematical model that is identified by the manufacturer at the time of certification as having been used to rate a model or group of models.
² The twenty-four month period begins with a DOE determination that a rating is invalid through the process outlined above. Additional invalid ratings apply for the purposes of determining the appropriate consequences if the subsequent determination(s) is based on testing of a unit that was selected for testing within the twenty-four month period (i.e., subsequent determinations need not be made within 24 months).
³ A manufacturer may discuss with DOE’s Office of Enforcement whether existing test data on different basic models within the validation classes to which that specific AEDM was applied may be used to meet this requirement.

(B) If, as a result of eight or more invalid ratings, a manufacturer has lost the privilege of using an AEDM for rating, the manufacturer may regain the ability to use an AEDM by:

- (1) Investigating and identifying cause(s) for failures;
- (2) Taking corrective action to address cause(s);
- (3) Performing six new tests per validation class, a minimum of two of which must be performed by an independent, third-party laboratory to validate the AEDM; and
- (4) Obtaining DOE authorization to resume use of the AEDM.

(n) *Alternative efficiency determination method (AEDM) for fans and blowers.* (1) *Criteria an AEDM must satisfy.* A manufacturer is not permitted to apply an AEDM to a basic model of fan or blower to determine represented values pursuant to this section unless:

- (i) The AEDM is derived from a mathematical model that estimates the energy use characteristics of the basic model as measured by the applicable DOE test procedure and accurately represents the performance characteristics of that basic model;
- (ii) The AEDM is based on engineering or statistical analysis, computer simulation or modeling, or other analytic evaluation of actual performance data; and
- (iii) The manufacturer has validated the AEDM in accordance with paragraph (n)(2) of this section.

(2) *Validation of an AEDM.* Before using an AEDM, the manufacturer must validate the AEDM’s accuracy and reliability by comparing the simu-

lated FEI, or simulated efficacy, as applicable, to the tested FEI or tested efficacy, as applicable (determined by testing), as follows.

(i) *Select basic models.* For each fan or blower validation class listed as follows: centrifugal housed fan; radial housed fan; centrifugal inline fan; centrifugal unhoused fan; centrifugal power roof ventilator exhaust fan; centrifugal power roof ventilator supply fan; axial inline fan; axial panel fan; axial power roof ventilator; unhoused ACFH; axial housed ACFH; and housed centrifugal air circulating fan to which the AEDM is applied, a manufacturer must select at least two basic models compliant with any energy conservation standards in subpart J of part 431 of this chapter. In addition, at least one basic model selected for validation testing should include a motor, or a motor and controller if the AEDM is applied to a basic model with a motor 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

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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; 89 FR 44034, May 20, 2024; 89 FR 82070, Oct. 9, 2024]

§ 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