DEPARTMENT OF ENERGY

Office of Energy Efficiency and Renewable Energy

10 CFR Part 431

[Docket No. EE–RM–96–400]

RIN 1904–AA82

Energy Efficiency Program for Certain Commercial and Industrial Equipment: Test Procedures, Labeling, and Certification Requirements for Electric Motors.

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

ACTION: Final rule.

SUMMARY: The Energy Policy and Conservation Act, as amended, 42 U.S.C. 6291–6317 (the Act or EPCA) establishes energy efficiency standards and test procedures for commercial and industrial electric motors. Today's final rule establishes regulations to implement these requirements, and to establish efficiency labeling and compliance certification requirements for motors, as directed by EPCA.

EFFECTIVE DATE: This rule is effective November 4, 1999. The incorporation by reference of certain publications listed in the regulations is approved by the Director of the Federal Register as of November 4, 1999.

ADDRESSES: For the availability of material incorporated by reference, see **SUPPLEMENTARY INFORMATION**.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION: The Department of Energy (DOE or Department) is incorporating by reference, test procedures and definitional information from the Institute of Electrical and Electronics Engineers, Inc. (IEEE), the National Electrical Manufacturers Association (NEMA), the CSA International (CSA),[1] and the International Electrotechnical Commission (IEC). These test procedures and definitional information are set forth in the standards publications listed below:

1. National Electrical Manufacturers Association Standards Publication MG1–1993, *Motors and Generators*, and Revisions 1, 2, 3 and 4.
2. Institute of Electrical and Electronics Engineers, Inc., *Standard Test Procedure for Polyphase Induction Motors and Generators*, IEEE Std 112–1996, and the correction to the calculation at item (28) in section 10.2 Form B-Test Method B issued by IEEE on January 20, 1998.
3. CSA International (or Canadian Standards Association) Standard C390–93, *Energy Efficiency Test Methods for Three-Phase Induction Motors*.
4. International Electrotechnical Commission Standard 60034–1 (1996), *Rotating electrical machines*, Part 1: *Rating and performance*, and Amendment 1 (1997).
5. International Electrotechnical Commission Standard 60050–411 (1996), *International Electrotechnical Vocabulary Chapter 411: Rotating machinery*.
6. International Electrotechnical Commission Standard 60072–1 (1991), *Dimensions and output series for rotating electrical machines—Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080*.
7. International Electrotechnical Commission Standard 60034–12 (1980), *Starting performance of single-speed three-phase cage induction motors for voltages up to and including 660 V*, and Amendment 1 (1992) and Amendment 2 (1995).

Copies of these standards publications may be viewed at the Freedom of Information Reading Room, U.S. Department of Energy, Forrestal Building, Room 1E–190, 1000 Independence Avenue, SW, Washington, DC 20585–0101, telephone (202) 586–3142, between the hours of 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

Copies of the NEMA standards and the International Electrotechnical Commission standards can be obtained from Global Engineering Documents, 15 Inverness Way East, Englewood, Colorado 80112–5776. Copies of the IEEE standards can be obtained from the Institute of Electrical and Electronics Engineers, Inc., 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855–1331. Copies of the CSA standards can be obtained from CSA International, 178 Rexdale Boulevard, Etobicoke (Toronto), Ontario, Canada M9W 1R3.

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[1] The Notice of Proposed Rulemaking (NOPR) in this matter contains many references to the ''Canadian Standards Association.'' Since publication of the NOPR, that organization has changed its name to CSA International. In this Notice and today's final rule, therefore, the latter name is used to refer to the organization, although abbreviated references use the abbreviation ''CSA'' as in the NOPR.

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I. Introduction

A. Authority

Part B of Title III of the Energy Policy and Conservation Act of 1975, Public Law 94–163, as amended, by the National Energy Conservation Policy Act of 1978 (NECPA), Public Law 95–619, the National Appliance Energy Conservation Act of 1987 (NAECA), Public Law 100–12, the National Appliance Energy Conservation Amendments of 1988 (NAECA 1988), Public Law 100–357, and the Energy Policy Act of 1992 (EPAct), Public Law 102–486, established the Energy Conservation Program for Consumer Products other than Automobiles. Part 3 of Title IV of NECPA amended EPCA to add ''Energy Efficiency of Industrial Equipment,'' which includes electric motors. EPAct also amended EPCA with respect to electric motors, providing definitions in section 122(a), test procedures in section 122(b), labeling provisions in section 122(c), energy efficiency standards in section 122(d), and compliance certification requirements in section 122(e).[2]

EPCA defines ''electric motor'' as any motor which is ''general purpose T-frame, single-speed, foot-mounting, polyphase squirrel-cage induction of the National Electrical Manufacturers Association (NEMA) Designs A and B, continuous-rated, operating on 230/460 volts and constant 60 Hertz line power, as defined in NEMA Standards Publication MG1–1987.'' EPCA § 340(13)(A), 42 U.S.C. 6311(13)(A). EPCA then prescribes efficiency standards for electric motors that are 1 through 200 horsepower, and ''manufactured (alone or as a component of another piece of equipment),'' except for ''definite purpose motors, special purpose motors, and those motors exempted by the Secretary.'' EPCA § 342(b)(1), 42 U.S.C. 6313(b)(1).

The Act also requires that testing procedures for electric motor efficiency shall be the test procedures specified in NEMA Standards Publication MG1–1987, and the Institute of Electrical and Electronics Engineers, Inc., (IEEE) Standard 112 Test Method B for motor efficiency, as in effect on October 24, 1992. EPCA § 343(a)(5)(A), 42 U.S.C. 6314(a)(5)(A). If those specified test procedures are amended, the Secretary must amend the testing procedures under EPCA to conform to such amended test procedures in the NEMA and IEEE standards, unless the Secretary determines, by rule, that the amended test procedures are not reasonably designed to produce results that reflect energy efficiency, energy use, and estimated operating costs, and would be unduly burdensome to conduct. EPCA § 343(a)(5) (B) and (C), 42 U.S.C. 6314(a)(5) (B) and (C).

Additionally, EPCA directs the Secretary, subject to certain conditions and after consultation with the Federal Trade Commission (FTC), to prescribe efficiency labeling rules for electric motors. EPCA § 344(d), (f), and (h) 42 U.S.C. 6315(d), (f) and (h).

Finally, the Act directs the Secretary to require motor manufacturers to certify compliance with the applicable energy efficiency standards through an independent testing or certification program nationally recognized in the United States. EPCA § 345(c), 42 U.S.C. 6316(c).

B. Background

The Department held a public meeting on June 2, 1995, to discuss issues and gather information related to the energy efficiency requirements for electric motors covered under EPCA. The meeting covered the following questions: How should key terms be defined? Which equipment is covered by the statute? What is the nature and scope of required testing? How can independent testing and certification programs be used to establish compliance with applicable standards? What are the means of certifying such compliance to DOE? What are possible labeling requirements? What other issues need resolution? Statements received after publication of the Notice of that public meeting (60 FR 27051, May 22, 1995), and at the meeting itself, helped to refine the issues involved in this rulemaking, and provided information that contributed to DOE's proposed resolution of these issues.

On November 27, 1996, DOE published in the **Federal Register** a proposed rule (NOPR), to create a new part 431 in the Code of Federal Regulations (10 CFR Part 431), entitled the Energy Conservation Program for Commercial and Industrial Equipment. 61 FR 60440 (November 27, 1996). This NOPR set forth energy efficiency requirements for electric motors. As with the program for consumer products, the proposed rule encompassed the following: test procedures; Federal energy conservation standards; labeling; and certification and enforcement. The testing and standards requirements prescribed by EPCA were incorporated in the proposed rule. Labeling requirements in accordance with EPCA's criteria for electric motor labels, and certification, enforcement and state law pre-emption provisions, largely patterned after those applicable to consumer products, were proposed. In addition, to implement EPCA's testing and certification requirements, the NOPR proposed requirements concerning the selection of electric motors for testing and the entities that could be used to establish that a motor complies with the applicable standard. Finally, the NOPR proposed provisions to clarify which motors are covered by EPCA, including clarification of the statutory definition of ''electric motor.''

Despite these clarifications, manufacturers expressed uncertainty as to which electric motors, with which modifications, are covered under EPCA. They also questioned their ability to comply with the statute by the effective date of October 24, 1997 with respect to certain motors. To address these issues, the Department, on November 5, 1997, published *Policies on Coverage and Enforcement of Energy Efficiency*

[2] These requirements are codified in Part C of Title III of the Energy Policy and Conservation Act, as amended, 42 U.S.C. 6311–6317.

Requirements for Electric Motors; Final Rule, 62 FR 59978 (November 5, 1997) (Policy Statement). This Policy Statement, based on recommendations from motor manufacturers and energy efficiency advocates, provided guidance as to which modifications of electric motors are ''general purpose,'' ''definite purpose,'' and ''special purpose'' under EPCA. The Policy Statement also stated circumstances under which the Department would refrain from taking enforcement action with respect to certain limited categories of motors that would not meet the energy efficiency standards by the October 25, 1997 effective date.

Comments presented at the public hearing on January 15, 1997, and additional written comments submitted following the public hearing have helped the Department to refine and resolve the issues involved in this rulemaking. Portions of many of the statements are quoted and summarized in section II, *Discussion of Comments*. A parenthetical reference at the end of a quotation or passage in section II provides the location index in the public record of the portion of a statement that is being quoted or discussed.[3]

The hearing and written comments, as well as the Department's further review of the proposed rule, gave rise to several issues that were subsequently addressed in a notice reopening the comment period for the proposed rule, which was published in the **Federal Register** at 63 FR 34758 (June 25, 1998) (''reopening notice''). The issues concerned (1) modifications to the IEEE Std 112–1996 Method B test procedures, (2) adoption of sampling plans for compliance and enforcement proposed by the National Electrical Manufacturers Association in lieu of the sampling plans in the proposed rule, (3) sampling plans where a motor's efficiency is established through a certification organization rather than through testing in an accredited laboratory, (4) enforcement testing where violation of a labeling representation is alleged, and (5) procedures for the withdrawal of recognition from an organization DOE has classified as an accreditation body, or as a nationally recognized certification program. Comments received as a result of the reopening notice have further helped the Department to refine and resolve the issues in this rulemaking.

C. Summary of Rule

Today's final rule incorporates the energy efficiency test procedures and standards established by EPCA for certain commercial and industrial electric motors. EPCA sections 343(a)(5), 42 U.S.C. 6314(a)(5), and 342(b)(1), 42 U.S.C. 6313(b)(1). It also establishes efficiency labeling requirements and compliance certification requirements for motors, as directed by EPCA. EPCA sections 344, 42 U.S.C. 6315, and 345(c), 42 U.S.C. 6316(c). Among its provisions, today's final rule (1) defines terms used in the rule, including definitions that clarify which motors, including metric, are covered under EPCA;[4] (2) incorporates by reference the IEEE Standard 112 Test Method B (with minor modifications), CSA Standard C390 Test Method (1), and portions of other industry standards; (3) sets forth methods for establishing compliance, such as a sampling plan for selecting motors for testing, calculation in some instances of a motor's efficiency, use of an accredited laboratory for testing, and use of a certification program; (4) establishes criteria for recognizing laboratory accreditation organizations and certification programs; and (5) requires the energy efficiency value of an electric motor, and a Department of Energy Compliance Certification number, to be both marked on the nameplate and disclosed in marketing materials, and allows use of an ''ee'' logo or other similar logo. The rule also addresses waiver of the test procedures, pre-emption of state regulations, and enforcement.

II. Discussion

The Department received approximately 31 sets of written comments on the proposed rule, from motor manufacturers, original equipment manufacturers, energy efficiency advocates, trade associations, other government agencies, and individuals. The Department received data and recommendations related to the accuracy and workability of many provisions in the proposed rule.

A. Definitions

1. Electric Motor

Section 340(13)(A) of EPCA defines the term ''electric motor'' as ''any motor which is a general purpose T-frame, single-speed, foot-mounting, polyphase squirrel-cage induction motor of the National Electrical Manufacturers Association, Design A and B, continuous rated, operating on 230/460 volts and constant 60 Hertz line power as defined in NEMA Standards Publication MG1–1987.''

In the NOPR, DOE proposed to clarify this definition. Hence the proposed rule included an expanded definition of ''electric motor'' as well as a definition of ''general purpose motor,'' a term that is an important element of EPCA's definition of electric motor but that is not defined in EPCA. 61 FR 60442–46, 60465–66 (November 27, 1996). Although some comments, discussed below, raised issues concerning specific elements of the proposed definition of ''electric motor,'' none objected to DOE's overall approach or to the definition of ''general purpose motor.''

The Department understands, however, that there exist a wide variety of motors that are modifications to the generic general purpose motor, and that motor manufacturers are concerned as to precisely which of these motors, having various features and characteristics, are covered under the statute. There seems to be a consensus that, due to the large number and the constant changes of motor designs, it would be impractical and unwise for the DOE regulations to try to exhaustively delineate the specific types of motors that are covered.

In its opening statement at the January 15, 1997, public hearing (Public Hearing Tr. pg. 42),[5] NEMA suggested instead the use of guidelines, along with a matrix setting forth various motor designs, as an aid in construing the statute and regulations. (NEMA, No. 18).[6] The Department agrees with this approach, and believes the guidelines and the matrix provided in the Policy Statement, in conjunction with definitions in the proposed rule, make clear whether a motor is covered under EPCA and today's regulations. Therefore, today's rule adopts, with minor technical changes, the ''electric motor'' and related definitions of the proposed rule, and incorporates the

[3] For example: ''(UL, No. 9 at pg. 1)'' refers to (1) a statement that was submitted by Underwriters Laboratories Inc. and is recorded in the DOE Freedom of Information Reading Room in the docket under ''Energy Efficiency Program for Certain Commercial and Industrial Equipment: Test Procedures, Labeling, and Certification Requirements for Electric Motors,'' Docket Number EE–RM–96–400, as comment number nine; and (2) a passage that appears on page 1 of that statement.

[4] Section 340(13) of EPCA defines ''electric motor'' and ''nominal full load efficiency'' by reference to NEMA Standards Publication MG1–1987. However, a more recent version of MG1, MG1–1993, is more readily available. Therefore, references to MG1 in the definitions in today's rule are to MG1–1993 rather than MG1–1987, whenever reference to the current version results in the rule having the same substance and coverage as it would have with a reference to MG1–1987.

[5] ''Public Hearing, Tr. pg. 42,'' refers to the page number of the transcript of the ''Public Hearing on Energy Efficiency Standards, Test Procedures, Labeling, and Certification Reporting for Certain Commercial and Industrial Electric Motors,'' held in Washington, DC, January 15, 1997.

[6] See footnote 2.

Policy Statement as appendix A to subpart A of 10 CFR Part 431 of the rule.

The following addresses the comments concerning specific elements of the proposed definition of ''electric motor:''

NEMA Electrical Designs A, B, and C. Sections 342 through 345 of EPCA require only certain motors to meet applicable energy efficiency requirements. In accordance with EPCA's definition of ''electric motor,'' quoted above, section 431.2 of the proposed rule, 61 FR 60465 (November 27, 1996), and of today's final rule, state that an electric motor ''(6) Has performance in accordance with NEMA Design A or B characteristics, or equivalent designs such as IEC Design N * * *''

Toshiba advocates that Design C motors be covered by EPCA. (Toshiba, No. 14, p. 2.). Standard efficiency stock motors are generally Design A or B, and Mr. W. Treffinger asserts that several manufacturers offer such motors as Design C. He raises the question as to whether a manufacturer could re-nameplate these motors as ''Design C definite purpose/conveyor duty'' in order to continue selling current designs that do not meet EPCA efficiency standards. (Treffinger, No. 4 at 3.).

The purpose of this rulemaking is to implement EPCA's efficiency requirements for electric motors. Since EPCA imposes such requirements only for Designs A and B, as categorized in NEMA MG1, for the Department to cover Design C motors in today's rule would go beyond the requirements of EPCA and the scope of this rulemaking. Therefore, the Department cannot accept Toshiba's apparent suggestion that it extend EPCA efficiency requirements directly to Design C motors. In addition, it is questionable whether the Department has the discretion to take such action, absent an amendment to EPCA. See EPCA sections 340–341, 42 U.S.C. 6311–6312. On the other hand, a motor that exhibits the performance characteristics of NEMA Designs A or B, and that is mis-labeled NEMA Design C, is obviously covered by EPCA.

Additional Motor Designs and Characteristics. Toshiba International Corporation and Mr. W. Treffinger assert that EPCA should cover as large a population of motors as possible to maximize energy savings. Both would extend EPCA coverage to include footless or round body motors which are face-mounting or flange-mounting, motors operating on 200 volts or 575 volts, definite-purpose motors such as close-coupled pump motors, and motors with 8 or more poles. Toshiba and Mr. Treffinger argue that such motors have essentially the same electrical characteristics as covered electric motors, and the addition of such motors would maximize energy savings. (Toshiba, No. 14, and Treffinger, No. 4 at 1.).

The Department is sympathetic to the potential energy savings that could be achieved if the aforementioned types of motors were covered by EPCA. In the Department's view, however, as with Design C motors, EPCA does not impose efficiency requirements for the types of motors described by Toshiba and Mr. Treffinger, and hence they are outside the scope of this rulemaking. The Department, nevertheless, encourages motor manufacturers to voluntarily improve the efficiency of any motor designs, if the improvements are technically feasible, economical, and energy-saving.

Voltage rating. Section 340(13)(A) of EPCA defines ''electric motor,'' in part, as ''operating on 230/460 volts and 60 Hertz line power.'' The DOE proposed rule (61 FR 60465, November 27, 1996) clarifies this part of the EPCA definition as meaning a motor that ''operates on polyphase alternating current 60-Hertz sinusoidal power, and is: (i) Rated 230 volts or 460 volts, or both, including any motor that is rated at multi-voltages that include 230 volts or 460 volts, or (ii) Can be operated on 230 volts or 460 volts, or both.''

The joint comments of the Washington State University Cooperative Extension Energy Program and the Washington State Department of Community, Trade and Economic Development (WSU/WSD) state that motors designed for standard service voltages of 240 and 480 volts are rated at 230 and /or 460 volts, from zero to eight percent lower than those standard service voltages, to allow for presumed distribution system voltage drop. They assert that a tolerance be placed on the 230/460 volt stipulation to allow for deviations that occur in this rating among motor models intended for the same service voltage, and give examples of motors on the market which are rated at 220 and 440, and others rated at 480 volts. WSU/WSD recommend at least a 10 percent tolerance be applied to the 230 volts and 460 volts prescribed by EPCA, and that item (7)(ii) in the ''electric motor'' definition in section 431.2 of the final rule explicitly state: ''Can be operated on 230 volts or 460 volts without exceeding the 10% over/under voltage tolerance stipulated in NEMA MG1 1993 R1, section 12.44.'' (WSU/WSD, No. 5, at II.A.).

The Department agrees with WSU/WSD's apparent assumption that motors with voltages within the 10 percent tolerance meet EPCA's definition of ''electric motor,'' and with WSU/WSD's statement that such motors meet the ''electric motor'' definition in the proposed rule. (WSU/WSD, No. 5 at II.A.).

In its Policy Statement, issued subsequent to the filing of WSU/WSD's comments, the Department stated that the criteria in NEMA MG1–1993, paragraph 12.44, ''Variations from Rated Voltage and Rated Frequency,'' which includes the 10 percent voltage tolerance criterion, should be used to determine whether a motor not rated at 230 or 460 volts or 60 Hertz would nevertheless be within EPCA's definition of ''electric motor.'' The Department also indicated in the Policy Statement, and continues to believe, that such criteria apply in determining whether a motor meets the ''electric motor'' definition in the proposed rule. The Department is aware of no opposition to these positions, including its view that the 10 percent tolerance is to be used to determine which motors are covered by EPCA efficiency requirements. Moreover, DOE sees no reason to include this tolerance in the regulatory definition of electric motor, but not the other variations addressed in NEMA MG1–1993 paragraph 12.44. To include all of these variations, however, would increase substantially the complexity of the definition. For these reasons, DOE believes that it is unnecessary to add to the final rule language proposed by WSU/WSD on this point.

2. Basic Model

The proposed rule defines ''basic model'' to mean ''all units of a given type of covered equipment (or class thereof) manufactured by a single manufacturer, and, with respect to electric motors, which have the same rating, have electrical characteristics that are essentially identical, and do not have any differing physical or functional characteristics which affect energy consumption or efficiency.'' As used in this definition, ''rating'' is ''one of the 113 combinations of an electric motor's horsepower (or standard kilowatt equivalent), number of poles, and open or enclosed construction, with respect to which section 431.42 prescribes nominal full load efficiency standards.'' 61 FR 60465 (November 27, 1996).

WSU/WSD support the idea of defining ''basic model'', but assert that the limits on what electric motors can be consolidated into a particular basic model need to be more specific. WSU/WSD suggest that electric motors

consolidated into a basic model have the following criteria: (1) identical enclosure designation; (2) identical and interchangeable stator cores; (3) electrically identical windings, i.e. circular mils and ampere-turns per slot, winding pattern, and resistance in milliohms per rated volt; and (4) identical and interchangeable rotor core and cage. WSU/WSD also recommended that no untested model of motor be adopted into a basic model consolidation if it has mechanical features that tend to increase friction or windage above tested models. Such features could include larger bearings, sealed versus shielded bearings, a larger or higher capacity cooling fan, or shaft grounding brushes. (WSU/WSD, No. 5 at II.E.)

The Department believes that many enclosure designations are based on physical or functional characteristics which have nothing to do with the energy consumption or efficiency performance of a motor. For example, the same electrical design may be put into enclosures identified as open, dripproof, splash-proof, semi-guarded, guarded, or dripproof guarded, yet the enclosures may differ only in the location and size of the ventilation holes in the frame. Because all of these enclosures would have different designations using standardized industry terminology, to define ''basic model'' in terms such as ''identical enclosure designations'' or ''electrically identical windings,'' as recommended by WSU/WSD, would appear to increase the number of basic models immensely without apparent benefit. In another example, the same electrical design is often used in general purpose enclosed motors and explosion-proof motors, differing only in the construction and fit of the joints and frame openings (shaft and conduit box leads) to meet hazardous location requirements. In this case, the two separate motors would necessarily have different enclosure designations. Both would be considered enclosed motors that could be included within the same basic model as that term is defined as in section 431.2 of the proposed rule, 61 FR 60465 (November 27, 1996), although under the WSU/WSD approach they would be different basic models. The Department concludes that the WSU/WSD criteria for characterizing ''basic model,'' would lead to additional testing and reporting that are unnecessary to achieve compliance with EPCA efficiency requirements, and would be unduly burdensome to manufacturers. Therefore, the Department is adopting, in today's final rule, the definition of ''basic model'' at 61 FR 60465 (November 27, 1996) in the proposed rule.

3. General Purpose

The descriptor ''general purpose,'' is one element both of the definition of ''electric motor'' and ''definite purpose motor'' at sections 340(13)(A) and (B) of EPCA, respectively. EPCA characterizes, in part, a ''definite purpose motor'' as any motor ''for use under service conditions other than usual'' and ''which cannot be used in most general purpose applications.'' EPCA defines neither ''general purpose'' nor ''service conditions other that usual.''

Section 431.2 in the proposed rule defines the term ''general purpose motor'' as ''any motor which is designed in standard ratings with either: (1) Standard operating characteristics and mechanical construction for use under usual service conditions, such as those specified in NEMA Standards Publication MG1–1993, paragraph 14.02, 'Usual Service Conditions,' and without restriction to a particular application or type of application; or (2) Standard operating characteristics or standard mechanical construction for use under unusual service conditions, or for a particular type of application, and which can be used in most general purpose applications.'' 61 FR 60466 (November 27, 1996).

Underwriters Laboratories Inc. (UL) expresses difficulty interpreting what is meant by ''other than usual'' service conditions. UL asserts that (1) the potential for misclassifying a motor is prominent, (2) it would be difficult to conclusively list ''unusual service conditions,'' and (3) it would be beneficial to have criteria for ''other than usual'' service conditions. (UL, No. 9, at pg. 1.).

The Department agrees that it would be beneficial to have criteria to judge ''other than usual'' service conditions, and that would be a formidable task to develop criteria that would account for the many environmental, power supply, and equipment operating characteristics which individually or in combination would constitute a service condition that is ''other than usual.'' NEMA Standards Publication MG1–1993 paragraph 14.03, ''Unusual Service Conditions'' lists examples, however, of operating conditions which require the manufacturer's consultation, to determine the suitability of a particular general purpose motor being considered for an application. The Department believes that no single item exemplified in paragraph 14.03, by itself, necessarily establishes the existence of unusual service conditions, and that paragraph 14.03 does not contain an exhaustive list of such conditions. Nevertheless, to provide guidance as to the meaning of this term, in the definitions of both ''general purpose motor'' and ''definite purpose motor'' the final rule cites paragraph 14.03 as providing examples of unusual service conditions. This is done in the same way that the proposed and final rules amplify the term ''usual service conditions'' by stating ''such as those specified'' in paragraph 14.02 of MG1–1993, ''Usual Service Conditions.''

4. Special Purpose Motor

Section 340(13)(C) of EPCA defines ''special purpose motor'' as ''any motor, other than a general purpose motor or definite purpose motor, which has special operating characteristics or special mechanical construction, or both, designed for a particular application.'' Section 431.2, ''Definitions,'' in the proposed rule, clarifies the term ''special purpose motor'' to mean ''any motor that is designed for a particular application, and that either (1) is designed in non-standard ratings with special operating characteristics or special mechanical construction, or (2) has special operating characteristics and special mechanical construction.''

NEMA objects to the qualifying language, ''non-standard ratings,'' in the proposed rule, asserting that it is common for special purpose motors to have standard ratings, not non-standard ratings. NEMA further asserts that it is unclear what the Department means by ''non-standard rating.'' It states that the term ''rating'' in section 431.2 of the proposed rule, is used as a qualifier in the definition of ''basic model,'' to refer to one of the 113 combinations of horsepower, poles, and open or enclosed construction, and as such appears to be in conflict with section 431.42(b) in the proposed rule, which applies the requirements in EPCA to non-standard ratings through an interpolation methodology. As to Part 2 of the proposed definition of ''special purpose motor,'' NEMA alleges a conflict with the language of the EPCA definition. NEMA claims that if the Department deleted the text ''in non-standard ratings'' from the NOPR's proposed definition of special purpose motor, the resulting definition would be consistent with the EPCA definition. (NEMA, No. 18 at page 4.).

The Department's proposed definition of ''special purpose motor'' was intended to clarify the distinction between that type of motor and motors that would be ''definite purpose'' motors but for the fact that they can be used in most general purpose

applications, and are therefore covered by EPCA requirements. Upon further review, the Department has decided that EPCA's definitions sufficiently distinguish between these types of motors, and agrees with NEMA that the substance of DOE's proposed definition departs from the statutory definition. Therefore, the definition of ''special purpose motor'' in the final rule is identical to the statutory definition of that term. The Department disagrees, however, with NEMA's assertion that the meaning given to the term ''rating'' in the definition of ''basic model'' apparently conflicts with other parts of the rule and creates uncertainty. The proposed rule's ''basic model'' definition states that such meaning of ''rating'' is ''for purpose [sic] of this definition.'' Thus such meaning does not apply throughout the rule.

5. Accreditation

Section 431.2 of the proposed rule defines ''accreditation'' as ''recognition by an authoritative body that a laboratory is competent to perform all of the specific test procedures that are required by or incorporated into this part.'' 61 FR 60465 (November 27, 1996).

NEMA asserts that it is not clear as to which ''test procedures'' are being referred to in the definition. NEMA states that the electric motor industry uses the term ''test procedures'' to apply to the IEEE Standard 112–1996 or CSA Standard C390–93 methods of conducting tests to measure motor efficiency. These methods have formed the basis of proposed accreditation programs to date. (NEMA, No. 18 at page 4.).

The Department agrees that the proposed definition needs to be clarified, and that accreditation to perform test procedures for electric motors is with reference to IEEE Standard 112 Test Method B and CSA Standard C390 Test Method (1). The Department also notes, however, accreditation would generally have to be based on the version of the test method currently incorporated into the DOE regulations. For these reasons, in today's final rule, the term ''accreditation'' is defined at section 431.2 of 10 CFR Part 431, as recognizing competence to perform the IEEE Std 112–1996 Test Method B and CSA Standard C390–93 Test Method (1) for electric motors.

6. Average Full Load Efficiency

Section 431.2 of the proposed rule defines ''average full load efficiency'' to mean ''the average efficiency of a population of electric motors of duplicate design, where the efficiency of each motor in the population is the ratio (expressed as a percentage) of the motor's useful power output to its total power input when the motor is operated at its full rated load.''

NEMA recommends that the clarifying text, ''rated voltage, and rated frequency,'' be added after the words ''full rated load,'' in the definition of ''average full load efficiency.'' (NEMA, No. 18 at page 4.). Washington State asserts that it would be more precise to define ''average full load efficiency'' as the ''arithmetic mean efficiency,'' since ''average'' could convey various measures of central tendencies, such as median or mode. (WSU/WSD, No. 5 at II.N.).

The Department believes that the clarifying text, ''rated voltage, and rated frequency,'' proposed by NEMA, is consistent with the EPCA definition of ''electric motor,'' which refers to ''Design A and B'' and ''operating on 230/460 volts and constant 60 Hertz line power as defined in NEMA Standards Publication MG1–1987.'' Moreover, the clarifying text provides a benchmark for measuring the average full load efficiency of a population of electric motors of duplicate design by screening out voltage and frequency variations which could be deleterious to efficiency under running conditions. Therefore, the Department is adding the words ''rated voltage, and rated frequency'' in today's final rule. The Department also understands the need for clarity in the definition of ''average efficiency'' per WSU/WSD's comment, and is adding the term ''arithmetic mean efficiency'' in the definition of ''average full load efficiency.''

7. Nominal Full Load Efficiency

The term ''nominal full load efficiency'' in section 341(13)(H) of EPCA means ''the average efficiency of a population of motors of duplicate design as determined in accordance with NEMA Standards Publication MG1–1987.'' Section 431.2 in the proposed rule defines the term ''nominal full load efficiency'' as it applies to an electric motor, to mean ''the nominal efficiency in Column A of Table 12–8, NEMA Standards Publication MG1–1993, that is either the closest lower value to, or that equals, the average full load efficiency of electric motors of the same design.''

NEMA encourages the Department to use a definition of ''nominal full load efficiency'' as it is in NEMA MG1–1993, to avoid the confusion of more than one definition of ''nominal full load efficiency.'' NEMA acknowledges that the MG1 definition does not require the manufacturer to select a single value for nominal efficiency from Table 12–8 in NEMA MG1, but that the manufacturer could select any value that does not exceed the average full load efficiency of the population of motors. NEMA contends that the EPCA definition takes the same approach. (NEMA, No. 18 at p. 5.)

Based on testimony at the Public Hearing on January 15, 1997 (TR pgs. 57–60), the Department understands that the fixed values in Table 12–6B in NEMA MG1–1987 (Table 12–8 in MG1–1993) are an adopted set of incremental values that manufacturers have chosen to use as labeling values. The Department is aware that the NEMA MG1 Table 12–6B was created to prevent mismarking or confusion that could occur if one manufacturer, for example, labeled a motor 93.53 percent efficient and another manufacturer marked a motor 93.57 percent efficient. Variations in materials, manufacturing processes, and tests can result in motor-to-motor variations for a given motor design, so that the full load efficiency for motors of a single design is not a unique efficiency but rather a band of efficiency. The NEMA MG1 Table 12–6B established a logical series of ''nominal'' motor efficiencies, from which the motor nameplate efficiency marking is selected, to avoid the inference of unrealistic accuracy that might be assumed from a potentially infinite number of labeled efficiency values. Thus, paragraph 12.58.2 of NEMA MG1–1993 provides that the full load efficiency of a motor shall be identified by a nominal efficiency value selected from Table 12–8 (previously Table 12–6B in NEMA MG1–1987), ''which shall be not *greater than* the average efficiency of a large population'' of such motors. Such nominal value could, in theory, be any value listed in Table 12–8 that is not greater than the average efficiency of the large population.

The Department's proposed definition resulted from a belief that manufacturers should be required to use for each motor the nominal full load value that corresponds most closely to the efficiency test or calculation results for that motor. NEMA has stated, however, that other analysis might influence a manufacturer to select a lower value for a particular motor, and that a manufacturer would be unlikely to select a value lower than the greatest value that could be supported.

Notwithstanding its view that its proposed definition of ''nominal full load efficiency'' is supported by the definition of that term in EPCA, the Department also believes the Act can be construed as supporting use of the

approach in MG1–1993. In light of NEMA's comments, the Department is adopting, in today's final rule, a definition of ''nominal full load efficiency'' that conforms to the use of that term in paragraph 12.58.2 of MG1–1993.

B. Test Procedures

Section 343(a)(5)(A) of EPCA requires that the test procedures to determine the efficiency of electric motors under EPCA shall be the test procedures specified in NEMA MG1–1987 and IEEE Standard 112 Test Method B (IEEE 112) for motor efficiency, as in effect on the date of the enactment of the Energy Policy Act of 1992. If the test procedures in NEMA MG1 and IEEE 112 are subsequently amended, the Secretary of Energy is required to revise the regulatory test procedures for electric motors to conform to such amendments, ''unless the Secretary determines by rule, * * * supported by clear and convincing evidence, that to do so would not meet the requirements for test procedures described in'' sections 343(a) (2) and (3) of EPCA.

In general, the Edison Electric Institute (EEI) supports the energy efficiency test procedures prescribed in the proposed rule because they are consistent with the IEEE and the American National Standards Institute procedures. (EEI, No. 15)

1. NEMA Standards Publication MG1–1993, with Revisions 1 through 4

In the NOPR, the Department stated its intention to adopt the test procedures for the measurement of energy efficiency in NEMA MG1–1993 with Revision 1. 61 FR 60446, 60466, 60469 (November 27, 1996). Revision 2, 3 and 4 have also been added to MG1–1993. Revisions 2 and 3 make editorial clarifications to the determination of efficiency and losses under MG1–12.58.1. Whereas in MG1 Revision 1, motors from 1 to 125 horsepower were tested by dynamometer according to IEEE Standard 112 Test Method B or CSA Standard C390 Test Method (1), MG1 Revision 4 extends testing by dynamometer up to 400 horsepower under MG1–12.58.1, thereby including the 1 through 200 range of horsepower ratings under EPCA.

The Department does not intend to determine that the test procedure amendments in Revisions 2–4 of MG1–1993 fail to meet the requirements of sections 343(a)(2) and (3) of EPCA, 42 U.S.C. 6314(a)(2) and (3), except to the extent that such a determination is warranted, as discussed below, with respect to certain provisions of IEEE Std 112–1996 Test Method B (which MG1 references). The Department is adopting, in today's final rule, the test procedure requirements to measure energy efficiency and losses in NEMA MG1 with Revisions 1 through 4, but with certain modifications to IEEE Std 112–1996 Test Method B.

2. Modifications to the IEEE Std 112–1996 Test Method B

IEEE Std 112–1991 Test Method B was incorporated into the proposed rule, but was revised and superseded by IEEE Std 112–1996, which was published May 8, 1997. A minor revision was made in IEEE Std 112–1996 on January 20, 1998, when IEEE issued a notice of correction for the calculation at item (28) in section 10.2 Form B-Test Method B: ''Calculation form for input-output test of induction machine with segregation of losses and smoothing of stray-load loss.'' Under section 343(a)(5)(B) of EPCA, 42 U.S.C. 6314(a)(5)(B), DOE must now adopt the test procedures in IEEE Std 112–1996 with the minor revision, unless clear and convincing evidence supports a conclusion that such test procedures are not reasonably designed to produce test results which reflect energy efficiency, or are unduly burdensome to conduct.

The Department compared IEEE Std 112–1991 to IEEE Std 112–1996 to determine whether there were differences in the two versions of Test Method B, and, if so, whether to adopt Test Method B in IEEE Std 112–1996 into the final rule for electric motors. As a result of its analysis, the Department believes Test Method B in IEEE Std 112–1996 improves upon the version of that test method in IEEE Std 112–1991, because IEEE Std 112–1996 includes: tightened tolerances on metering instrumentation (IEEE 112, clause 4); a more comprehensive and consolidated verbal description of the components of Test Method B (IEEE 112, clause 6.4); and specific formulae provided for calculation of stator I^2R losses (IEEE 112, clause 5.1).

After publication of IEEE Std 112–1996 in May 1997, however, the Department became aware, through information submitted by a testing laboratory that has gained experience using the test procedure, that Test Method B in IEEE Std 112–1996 contains 1) typographical errors, 2) statements of procedure that are open to interpretation, and 3) incorrect information. For a given motor, these defects could cause varying measurements of efficiency, or errors ranging from plus or minus one-half to one and one-half percentage points in measured efficiency, thereby throwing an electric motor into the next higher or lower level of nominal efficiency, and effectively rendering it either in or out of compliance with the applicable EPCA efficiency standard. Subsequently, the Department confirmed the existence of these types of problems with IEEE Std 112–1996 through contacts with other testing laboratories, a certification organization, and manufacturers, each known to have experience with IEEE Standard 112–1996, and through discussions with the Chairman of the IEEE Induction Power Subcommittee. (IEEE has since corrected one such error, in its January 1998 notice of correction.) In sum, although Test Method B in IEEE Std 112–1996 has several advantages, mentioned above, it also has typographical errors, provisions subject to interpretation, and incorrect information.

The Department announced its intention, in the **Federal Register**, at 63 FR 34758 (June 25, 1998), that the final rule would prescribe IEEE Std 112–1996 Test Method B, with the January 1998 correction, as a test procedure under EPCA for determining the energy efficiency of electric motors, but with certain modifications set forth at 63 FR 34759–62 (June 25, 1998). The Department reopened the comment period on the proposed rule for motors, in part to solicit comments on these modifications. The Department noted, 63 FR 34759 (June 25, 1998), that it was not altering the IEEE test procedure, but was ''proposing only to mandate certain modifications to IEEE 112–1996 Test Method B *when it is used for purposes of measuring efficiency under EPCA*.''

The Department received six sets of comments on these proposed modifications to IEEE Std 112–1996 Test Method B. There is general acknowledgment that IEEE Std 112–1996 Test Method B needs modification or correction, but some commenters opposed changes by the Department for purposes of EPCA. In general, Advanced Energy Corporation and Zentralverband Elektrotechnik-und Elektronikindustrie e.V. (ZVEI) support the Department's corrections and modifications to IEEE Std 112–1996. (AEC, No. 35 and ZVEI, No. 37 pgs. 2–3.). GE Motors, NEMA and ACEEE, however, assert that corrections and modifications to IEEE Standard 112–1996 Test Method B should be accomplished instead through the voluntary standards making process (GE, No. 39, and NEMA/ACEEE, No. 38). NEMA and ACEEE oppose the Department's making any modifications or corrections to the IEEE Standard 112–1996 Test Method B on grounds that such changes could (1) unnecessarily lengthen the time for completion of the final rule for motors; (2) differ from

changes which might be made by IEEE; (3) delay manufacturers from certifying compliance and disrupt laboratory accreditation programs; and (4) create confusion in the industry because there would be two versions of IEEE Standard 112, one for electric motors covered by EPCA and one for motors not covered by EPCA. NEMA and ACEEE also assert that the many typographical errors and provisions subject to interpretation have been dealt with by motor manufacturers and are not a problem. NEMA and ACEEE recommend that the Department adopt IEEE Std 112–1996, with the January 20, 1998 revision, and without the corrections and modifications proposed in the reopening notice (NEMA/ACEEE, No. 38). GE Motors agrees with the Department that typographical errors in IEEE Standard 112 should be corrected, but asserts that instead of changing the IEEE Standard 112 Test Method B for use under EPCA, the Department should communicate its understanding of the needed corrections and modifications to the National Institute of Standards and Technology/National Voluntary Laboratory Accreditation Program (NIST/NVLAP) for application in its proficiency testing program for electric motors. (GE, Nos. 39, 46). IEEE submitted the Department's June 25, 1998, reopening notice to the IEEE Induction Machinery Subcommittee for its review and recommendations, and stated that it would ''take any action deemed necessary to update or amend'' IEEE Std 112–1996. But IEEE did not indicate when it would address the points in the reopening notice. (IEEE, No. 34).

The Department understands that IEEE typically updates its standards approximately every five years, and that the next revision of IEEE Std 112–1996 is scheduled for the year 2001, although it might be published in the year 2000. (Martiny/Knab, No. 41; IEEE, No. 46). In the Department's view, this would be too great a delay in correcting IEEE Standard 112 for use under EPCA. The Department also understands industry concern that, subsequent to any changes the Department would make, IEEE might make different changes to IEEE Standard 112. Nevertheless, if and when such changes are forthcoming from IEEE, the Department will essentially be required, under section 343(a)(5)(B) of EPCA, to incorporate such changes in to the DOE test procedures under EPCA, unless the Secretary properly determines otherwise. In regard to laboratory accreditation programs, any changes to IEEE Standard 112 Test Method B for purposes of EPCA would be applied, for consistency, in the NIST/NVLAP accreditation program. NIST/NVLAP has advised DOE, however, that the changes in today's final rule would not affect existing or future NIST/NVLAP accreditations of laboratories to test motors for energy efficiency. (NIST/NVLAP, No. 45). As to the assertion that the typographical errors and procedures subject to interpretation are not problematic, use of IEEE Standard 112 has been voluntary until recently. But under today's rule, it will be mandatory, and will be the basis for determining whether manufacturers are complying with EPCA and can sell their products. When a test procedure is used in this type of mandatory environment, there is greater need than in a voluntary environment for it to be precise and uniformly applied.

Upon consideration of the comments received and further review of the issues, the Department continues to believe, for the reasons stated in the reopening notice and this notice, that IEEE Std 112–1996 Test Method B should be adopted as the EPCA test procedure for electric motors, but with certain modifications and corrections. The Department emphasizes, however, that such modifications and corrections in today's rule do not fundamentally or extensively alter IEEE Std 112–1996 Test Method B. Rather, these changes are essentially technical corrections and interpretations of Test Method B, which fine tune and clarify it, will enable it to work better, and realize the intent of the test procedure. The Department disagrees with the claims that these changes will delay compliance certification or create a second version of IEEE Standard 112 that will cause confusion. Instead, the test procedure in today's rule in essence conforms to IEEE Std 112–1996. Furthermore, as demonstrated by the discussion in this notice and in the reopening notice, absent the changes contained in this rule, IEEE Std 112–1996 Test Method B would not be reasonably designed to produce results that reflect energy efficiency and would be unduly burdensome to conduct. Consequently, changes in Test Method B, as described in the following passages, are incorporated into today's rule.

a. Typographical Errors

Page 17, subclause 6.4.1.3, No-load test, currently reads: ''See 5.3 including 5.33, * * *.'' In today's final rule, this reference is changed to read: ''See 5.3 including 5.3.3, * * *.''

Page 48, item (24), the formula for shaft power in watts, currently reads: ''Is equal to [(23) • (11)]/k_2'', but the constant k_2 is not defined. At section II.A.1.b. of the reopening notice, the Department proposed to correct the constant ''k_2'' in item (24) to the constant ''k''. The formula in item (24) would then read: ''Is equal to [(23) • (11)]/k''. 63 FR 34759 (June 25, 1998). Also, page 48, item (29) currently reads: ''See 4.3.2.2 Eq. 4.'' The Department stated, at section II.A. 2.c., that such reference to equation (4) in subclause 4.3.2.2, *Slip correction for temperature,* without explanation, could cause confusion and errors, since the terms in equation (4) used to correct slip measurements to the specified stator temperature, are defined differently from similar terms used in 10.2 Form B. 63 FR 34760 (June 25, 1998).

NEMA and ACEEE assert that it is preferable to change the constant ''k'' in item (22) to ''k_2'' since this would follow in sequence the previous appearance of the constant ''k_1'' in item (16). Such a change would also eliminate some of the confusion the Department notes in section II.A.2.c. of the reopening notice, concerning the different definitions given for ''k'' in subclause 4.3.2.2 and ''k'' in item (22) on page 48, since ''k'' would no longer be included in item (22). (NEMA/ACEEE No. 38 at pg. 2).

The Department understands that there is not a consistent definition of terms throughout IEEE Std 112–1996. For example, the term ''k'' is used in sections 4.3.1, 7.2.2, 7.3.2.1, 7.3.2.2, 7.3.2.3, 10.1 and 10.2 of IEEE Std 112–1996 to convert power in watts to torque, and in sections 4.2.3, 4.3.2.2 and 8.3.3 as the temperature intercept for computing the resistance. The term ''k'' without subscripts in IEEE Standard 112 is used often to mean different things, and therefore it has been the practice to define its meaning within each section where it is used. (NIST/NVLAP, No. 45). The Department believes that the NEMA and ACEEE change has merit and would eliminate some of the confusion described in sections II.A.1.b. and II.A.2.c. of the reopening notice, both with page 48, item (24) in the formula for shaft power in watts, and subclause 4.3.2.2 equation (4). 63 FR 34759. Therefore, in lieu of the change proposed by the Department in its reopening notice for page 48, item (24), the Department will change the torque constant at page 48, item (22) of IEEE Standard 112 Test Method B, from ''k'' to ''k_2'', in today's final rule. The term ''k_2'' at item (22) would then read: ''k_2 = 9.549 for torque, in N•m'' and ''k_2 = 7.043 for torque, in lbf•ft.'' Both the formula at page 48, item (24), and the constant ''k'' for conductivity at page 7, subclause 4.3.2.2 equation (4), are adopted without change from the IEEE Std 112–1996 Test Method B.

b. Provisions Subject to Interpretation

Page 8, subclause 5.1.1, ''Specified temperature'' provides three methods, listed in order of preference, to determine the ''specified temperature'' used in making resistance corrections: (a) measured temperature rise by resistance from a rated load temperature test; (b) measured temperature rise on a duplicate machine; and (c) use of a temperature correction table when rated load temperature has not been measured. The Department understands that only options ''a'' or ''b'' in subclause 5.1.1 are applicable to Test Method B. Information provided to the Department indicated, however, that option ''c'' is being misapplied to Test Method B. Therefore, at section II.A.2.a. of the reopening notice, the Department sought comment on whether its test procedure rule should incorporate into subclause 5.1.1 the following language: ''(Method B only allows the use of preference a) or b).)'' 63 FR 34759–60 (June 25, 1998).

AEC supports the Department's suggested modification of section 5.1.1. AEC agrees that a complete and thorough reading of IEEE Standard 112–1996 would make it clear that preference ''c'' is not compatible with Test Method B, as the Department argues at section II.A.2.a. of its reopening notice, 63 FR 34760 (June 25, 1998). However, AEC asserts that IEEE Standard 112–1996 is frequently used as a reference document where only a few clauses are reviewed at a given time, and that the proposed modification would preclude the inadvertent application of ''c'' to Test Method B. (AEC, No. 35 at pg. 2). Also, Underwriters Laboratories, Lincoln Electric, and NIST/NVLAP agree with the proposed revision to make clear at subclause 5.1.1 that only options ''a'' or ''b'' are applicable to Test Method B. (UL, No. 43, Lincoln, No. 44, and NIST/NVLAP, No. 45).

The Department concludes, based on the aforementioned comments, that the proposed change is warranted and would eliminate the possibility of misinterpreting subclause 5.1.1, which could lead to distortion of efficiency values by misapplication of option ''c.'' Consequently, in today's final rule, the Department incorporates into the first sentence of subclause 5.1.1 the following language: ''(Test Method B only allows the use of preference a) or b).)''

Page 47, the procedure to measure temperature in item (4) *Rated Load Heat Run Stator Winding Temperature* is not defined. Information in the footnote at the bottom of page 47, 10.2 Form B, indicates that the temperature for item (7), which is used as a basis for the temperatures in items (4), (27), and (16), can be either determined from a temperature detector or derived from measurement of the stator resistance during the test. The Department proposed, at section II.A.2.b. of its reopening notice, 63 FR 34760 (June 25, 1998), that the method of measuring both items (4) and (7) be consistent. There were no comments to the contrary. NIST/NVLAP concurs that the modification to the footnote is appropriate and will not affect its accreditation of laboratories. (NIST/NVLAP, No. 45). Therefore, the Department will, in today's final rule, incorporate a second sentence to the footnote at the bottom of page 47, 10.2 Form B, to read: ''The values for t_s and t_t shall be based on the same method of temperature measurement, selected from the four methods in subclause 8.3.''

Page 48, item (27) defines Stator I^2R Loss, in W, at (t_s)°C, and item (29) defines Corrected Slip, in r/min, on IEEE Std 112–1996 10.2 Form B. Page 48, item (29) currently reads: ''See 4.3.2.2, Eq 4.'' The Department believes that such reference, without explanation, to equation (4) in subclause 4.3.2.2, *Slip correction for temperature,* can cause confusion and errors, since the terms in equation (4) used to correct slip measurements to the specified stator temperature are defined differently from similar terms used in 10.2 Form B. As set forth at section II.A.2.c. of the reopening notice, based on its examination of 10.2 Form B and supporting sections of IEEE Standard 112, the Department proposed the following modifications to clarify the temperatures to be used for correcting the stator and rotor loss: (1) at the top of 10.2 Form B and below the line that defines ''rated load heat run stator winding resistance,'' insert a new line that will define ''t_s'' as it is defined in 6.4.3.2 and 6.4.3.3: ''Temperature for Resistance Correction (t_s) = ____ °C (See 6.4.3.2);'' (2) add a note at the bottom of 10.2 Form B to read: ''NOTE: The temperature for resistance correction (t_s) is equal to [(4) − (5) + 25°C];'' (3) add the reference ''see 6.4.3.2'' to the end of item (27) on page 48; and (4) change item (29) on page 48, which presently states ''See 4.3.2.2, eq. 4,'' to state: ''Is equal to (10) • [k_1 + (4) − (5) + 25°C] / [k_1 + (7)], see 6.4.3.3''. 63 FR 37460–1 (June 25, 1998).

There were no objections to the proposed clarifications of temperatures to be used for correcting stator and rotor loss. The Department concludes that the proposed modifications will reduce confusion and errors in the IEEE Test Method B, and therefore incorporates the aforementioned modifications into today's final rule.

Page 48, item (32), the equation to correct stray-load loss currently reads: ''Is equal to AT^2 where A = slope of the curve of (26) vs. $(23)^2$ using a linear regression analysis, see 6.4.2.7,'' and ''T = corrected torque = (23).'' In the reopening notice, the Department states both its concerns about this equation as well as considerations supporting use of the equation as written. The Department stated that it intends to adopt IEEE Std 112–1996, subclause 6.4.2.7, *Smoothing of the stray-load loss,* without change, but is still considering the option of making the change to add a restriction on the allowable value of the intercept. Also, the Department invited the submission of data that would show if any significant differences do occur between the final determined value of efficiency at 100 percent rated load, for various values of the stray-load loss intercept in repeated tests of the same motor. 63 FR 34761–62 (June 25, 1998).

AEC supports the modification to subclause 6.4.2.7 to add a restriction on the allowable value of the y intercept, and advises the Department that it finds such a check to be useful in verifying the validity of test data. (AEC, No. 35 at pg. 2).

ZVEI cites problems with the influence of a systematic measurement error on determined stray load losses, and rejects modification to the equation to correct stray load loss on the basis that it would only offset stochastic measurement errors. (ZVEI, No. 37 pgs. 2–3.).

The Department has been advised that it would be premature to require the absolute value of B to be less than 10 percent of the total loss. (NIST/NVLAP, No. 45). During the NIST/NVLAP accreditation process this limit on the absolute value of B was not a requirement. However, the data from some demonstration tests made during the on-site inspections of the laboratories requesting accreditation were all well within the 10 percent limit discussed in the reopening notice. The Department believes that future investigation of this subject is warranted. Presently, however, there is insufficient data available to support a specific limit for the value of B. Therefore, the Department will incorporate, into today's final rule, IEEE Std 112–1996, subclause 6.4.2.7, *Smoothing of the stray-load loss,* without change. Nevertheless, the Department continues to be interested in receiving data on this subject for

future consideration of a restriction on the allowable value of the intercept.

Page 17, subclause 6.4.1.3, ''No-load test,'' in the second sentence, currently reads: ''Prior to making this test, the machine shall be operated at no-load until both the temperature and the input have stabilized.'' Information provided to the Department indicated that the requirements for temperature and input stabilization during the no-load test appear to be undefined and could cause confusion. To clarify the pertinent subclause for temperature stabilization, the Department proposed, at section II.A.2.e. of the reopening notice, to modify the second sentence in 6.4.1.3 to read: ''Prior to making this test, the machine shall be operated at no-load until both the temperature has stabilized (see 8.6.3) and the input has stabilized.'' 63 FR 34762 (June 25, 1998).

AEC disagrees with the Department's proposal to modify subclause 6.4.1.3 by specifying temperature stabilization per subclause 8.6.3. AEC asserts that subclause 8.6.3 is a temperature stabilization definition for determining the end of a rated-load heat-run, is much too stringent a requirement for the no-load test, and would add approximately two hours of testing time to each motor test. Also, according to AEC, the proposed modification would create confusion with the execution of no-load stabilization, as defined in sections 5.3 and 4.3.1.1 of IEEE Standard 112 Test Method B. AEC suggests that subclause 6.4.1.3 be modified to omit the reference to temperature stabilization, i.e., remove the words ''both the temperature and the input have,'' and replace them with ''the input has.'' AEC explains that subclause 6.4.1.3 already references subclause 5.3, *Core loss and stabilization,* which defines ''power stabilization.'' AEC asserts that its modification will retain the ''power stabilization'' component, produce consistent, repeatable test results, and make subclause 6.4.1.3 consistent with subclauses 5.3 and 4.3.1.1, as well as with the no-load test as defined in IEEE Std 112–1991 Test Method B.

Further, AEC asserts that there is no need for temperature stabilization as part of a no-load test, based upon indications that the reference to ''temperature stabilization at no-load'' in subclause 6.4.1.3 was not one of the IEEE Induction Power Subcommittee's proposed changes in drafting IEEE Std 112–1996 Test Method B. (AEC, No. 35 and Martiny, No. 42). The Department has been advised through NIST/NVLAP that laboratories testing motors according to IEEE Standard 112–1996 Test Method B typically interpret subclause 6.4.1.3 to require only that the input watt reading not vary over 3 percent, and to disregard any requirement for temperature stabilization. (NIST/NVLAP, No. 45). Since the no-load test is made after the load test and dynamometer correction test, the motor is usually substantially below rated temperature and the temperature changes are small with time. Consequently, the Department withdraws its proposed modification, at section II.A.2.e. of the reopening notice, to include ''temperature stabilization'' in subclause 6.4.1.3 of the IEEE Standard 112 Test Method B. Instead, the Department is persuaded by AEC's comments to modify the second sentence in 6.4.1.3 and will incorporate the following into today's final rule: ''Prior to making this test, the machine shall be operated at no-load until the input has stabilized.'' (AEC, No. 35). The Department believes the modification provided by AEC will eliminate the confusion with subclause 6.4.1.3, which is identified at section II.A.2.e. of the reopening notice, and will not be unduly burdensome on manufacturers.

c. Incorrect Information

Page 40, subclause 8.6.3, Termination of test, the first and third sentences currently read: ''For continuously rated machines, readings shall be taken at intervals of ½ h[our] or less. * * * For continuous rated machines, the temperature test shall continue until there is 1 °C or less change in temperature rise between two successive readings.'' As written, however, this language allows temperature readings to be taken at intervals as brief as five seconds, for example. If such short intervals are used, there could be little or no rise in temperature between any two consecutive readings, even if the motor temperature is actually still rising. Consequently, the motor's temperature could be misconstrued as being stable. The Department proposed, at section II.A.3. in the reopening notice, to change the third sentence in subclause 8.6.3 (the second clause quoted above) to read: ''For continuous rated machines, the temperature test shall continue until there is 1 °C or less change in temperature rise over a 30-minute time period.''

NIST/NVLAP concurs with the proposed change to subclause 8.6.3, because it is consistent with the manner in which accredited laboratories are interpreting the temperature measurement procedure. (NIST/NVLAP, No. 45). No comments were received to contradict this proposed change and for the reasons stated in the reopening notice, the Department adopts this proposed change in today's final rule.

d. Summary

In sum, the Department is convinced that there is sufficient evidence to warrant use of IEEE Std 112–1996 Test Method B, with the aforementioned corrections, and no substantial evidence to the contrary. Such corrections would provide an accurate measurement of the energy efficiency of the motor being tested, and a measurement that is repeatable from one test to the next of the same motor or comparable motors. In addition, the Department believes that, with these corrections, manufacturers would not be burdened by having to resolve problems related to typographical errors, unclear provisions, and unnecessary references to other parts of IEEE Standard 112. Therefore, the Department incorporates, into today's final rule for motors, the test procedures in IEEE Std 112–1996 Test Method B, the correction to the calculation at item (28) in section 10.2 Form B-Test Method B issued by IEEE on January 20, 1998, and the aforementioned corrections and modifications.

C. Determination of a Motor's Efficiency: Use of Accredited Laboratories and Certification Programs, Selection of Basic Models for Testing, Alternative Means To Measure Efficiency, and Sampling Plans for Testing

1. Summary of DOE's Proposals

Section 343(a)(2) of EPCA, 42 U.S.C. 6314(a)(2), requires that the test procedures prescribed for electric motors by DOE be ''reasonably designed to produce test results which reflect energy efficiency,'' yet not be ''unduly burdensome'' to conduct. As per the proposed rule at 10 CFR 431.24, *Units to be tested,* a manufacturer would initially determine the efficiency of at least five basic models by testing, and of its remaining models either by testing or by use of an Alternative Efficiency Determination Method (AEDM). 61 FR 60466–67 (November 27, 1996). (Such testing to initially determine efficiency is referred to as ''compliance testing.'') Section 431.24 provides (1) criteria for deciding which basic models should undergo compliance testing, (2) a sampling plan for determining, for each such basic model, how many and which units must be tested, (3) criteria for the acceptability of an AEDM, including a requirement that the AEDM be substantiated by applying it to five basic models that have been tested for efficiency, and (4) requirements for

subsequent verification of an AEDM. Under section 431.25 of the proposed rule, the efficiency of a basic model must be either certified by a third-party certification organization, or based on testing (compliance testing and, where an AEDM is used, testing to substantiate the AEDM) that has been conducted in an accredited laboratory.

As per the proposed 10 CFR 431.127, *Enforcement,* the Department would ascertain in an enforcement proceeding, which could include testing (''enforcement testing''), whether a motor complies with the applicable energy efficiency standard and with the labeled value of efficiency. 61 FR 60472, 60474–75 (November 27, 1996). Proposed section 431.27 includes a sampling procedure for enforcement testing.

In the reopening notice, the Department proposed for consideration that the final rule prescribe neither criteria for selecting the basic models for compliance testing, nor a sampling plan for such testing, when a motor's efficiency is certified by a certification program. The Department also stated that it was considering adoption of revised sampling plans for compliance and enforcement testing, and of provisions for withdrawal of DOE recognition from an accreditation organization or certification program that deviates from the standards for recognition.

Many provisions of the proposed rule were the subject of little or no comment or dispute, including (1) the requirement that a manufacturer determine through testing the efficiency of five or more basic models (proposed section 431.24(a)), (2) allowing the use of AEDMs for other basic models (proposed section 431.24(a)), (3) the criteria for an AEDM (proposed section 431.24(a)(2)), (4) the basic approach in Section 431.24(a)(3) for establishing the accuracy and reliability of an AEDM, and (5) the provisions for subsequent verification of an AEDM (proposed section 431.24(b)(4)). The following addresses matters on which significant comments were received.

2. Issues Involving Both Use of Accredited Laboratories and Use of Certification Organizations

EPCA directs the Department to ''require manufacturers to certify through an independent testing or certification program nationally recognized in the United States, that [any electric motor subject to EPCA efficiency standards] meets the applicable standard.'' EPCA section 345(c), 42 U.S.C. 6316(c). Consistent with the approach in DOE's program concerning the energy efficiency of residential appliances, section 431.123 of the proposed rule provides that a manufacturer must certify to DOE the compliance and the efficiency levels of the electric motors it manufactures. 61 FR 60471 (November 27, 1996). The proposed rule meets the statutory mandate that certification be ''through'' an independent testing or certification program by requiring a manufacturer to *base* its certification on use of such a program, i.e., a manufacturer must use an independent testing program or a certification program to establish a motor's efficiency level and compliance, which it then certifies to DOE. See 61 FR 60458 (November 27, 1996).

To satisfy the intent of the ''independent testing'' provision of Section 345(c) of EPCA, and given the relative paucity of independent testing laboratories, the Department proposed that a manufacturer be permitted to establish compliance based on testing carried out in a laboratory accredited by a nationally recognized program such as the National Institute of Standards and Technology/National Voluntary Laboratory Accreditation Program (NIST/NVLAP). The laboratory could be the manufacturer's own laboratory. As required under section 345(c), the Department also permits a manufacturer to certify compliance based on its participation in a certification program. 61 FR 60455–56, 60458, 60467 (November 27, 1996).

The majority of comments were supportive of these proposals. For example, the Association of Independent Scientific, Engineering and Testing Firms (''ACIL'', formerly the American Council of Independent Laboratories) supports the adoption of the proposed rule regarding test procedures and certification for energy efficiency of electric motors, and in particular, the Department's proposal to allow electric motor manufacturers three approaches for establishing compliance: testing in the manufacturer's accredited laboratory; testing in an accredited independent testing laboratory; or use of a third-party certification program (ACIL, No. 7 and Public Hearing Tr. Pgs. 123–124 [7]). However, some commenters expressed concern about these options for compliance certification.

Zentralverband Elektrotechnik- und Elektronikindustrie e.V. (ZVEI) asserts that the manufacturer's declaration should be the preferred method compared with third-party certification, and should also be accepted without requiring testing in an accredited laboratory. (ZVEI, No. 37, pg. 2–3). As to third party certification, on the one hand the proposed rule requires the manufacturer to certify compliance to DOE, a requirement that is retained in today's final rule. Thus, ZVEI appears to have the erroneous view that DOE treats third party certification as an alternative to a declaration by the manufacturer. As indicated above, the third party certification contemplated under today's rule is a *basis* for the manufacturer's declaration. On the other hand, section 345(c) of EPCA clearly directs the Department to require manufacturers to certify compliance through either a testing program or a certification program. A preference for one over the other might be barred by the statute, and, in any event, DOE believes such a preference is unwarranted at this time given the potential benefits from using a certification program. See 61 FR 60457 (November 27, 1996). Concerning accreditation, as noted above use of an accredited laboratory serves to satisfy the EPCA provision calling for ''independent'' testing, and a manufacturer's declaration in and of itself would not in DOE's view satisfy the intent of this provision. To the extent ZVEI is concerned that foreign manufacturers would be unfairly burdened by having to test in laboratories accredited in the United States, DOE notes that today's final rule permits testing at a laboratory accredited by an accreditation body having a mutual recognition arrangement with NIST/NVLAP.

Sterling Electric, Inc. supports the need for more than one choice when selecting an accrediting body or certification organization to fulfill the requirement for compliance with EPCA efficiency standards. (Sterling, No. 13). The ACIL is concerned that the NOPR refers to only two private organizations that could certify electric motors to the Department's efficiency standards, and asks that the final proposal not refer to any one certification body or accreditation body. (ACIL, No. 7.). These organizations were identified by a manufacturer, 61 FR 60457 (November 27, 1996), which added that it is not necessary to limit independent certification—that is, certification of energy-efficient electric motors by a nationally recognized program—to two particular certification organizations.

The apparent concern that the Department might limit a manufacturer to only certain choices when selecting an agency to accredit its testing

[7] ''Public Hearing, Tr. Pgs. 123–124,'' refers to the page numbers of the transcript of the ''Public Hearing on Energy Efficiency Standards, Test Procedures, Labeling, and Certification Reporting for Certain Commercial and Industrial Electric Motors,'' held in Washington, DC, January 15, 1997.

laboratory or to certify the efficiency of its motors is unfounded. Sections 431.26, *Department of Energy recognition of accreditation bodies,* and 431.27, *Department of Energy recognition of nationally recognized certification programs,* of the proposed rule essentially provide that *any* accreditation body or certification organization can request classification by the Department as being nationally recognized in the United States for the purposes of section 345 of EPCA. Section 431.25(a) of the proposed rule permits a certificate of conformity for a basic model of an electric motor to be obtained from any certification program classified by DOE as nationally recognized under section 431.27, and permits testing in any laboratory accredited by NIST/NVLAP, by a foreign organization recognized by NIST/NVLAP, or by an organization classified by the Department, pursuant to section 431.26, as an accreditation body. Thus, a manufacturer would be able to establish compliance with EPCA standards through its own choice of any testing laboratory or certification program that meets these standards. In this regard, the Department will make no change to today's final rule.

Comments from Reliance Electric Company encourage the Department to include a separate and clearly identified paragraph in the final rule which states the ''methods'' that can be used for determining compliance with EPCA. Reliance suggests the following: (i) actual testing of a basic model of electric motor, (ii) use of an alternative efficiency determination method (AEDM), and (iii) use of a third party certification agency (Reliance, No. 11 at pgs. 6 and 7). Reliance, in recommending ''methods,'' including actual testing, use of an AEDM, and a third party certification agency, also asserts that accreditation ''in and of itself, is not an actual means for determining compliance.'' (Reliance, No. 11, p. 7).

The Department believes Reliance is addressing two related issues: (1) accreditation should not be considered an optional ''method'; and (2) the Department should explicitly recognize certification programs as an option. As to Reliance's proposed methods, the Department questions whether a certification program is a method for determining compliance, comparable to testing and use of an AEDM, because a certification program often determines the efficiency of an electric motor using one or both of these approaches, as well as other methods. However, the Department agrees that accreditation is not a method for determining whether electric motors are in compliance. Rather it is a means for assuring that a laboratory can perform the test procedures, and that a manufacturer's efficiency representations, to the extent they are based on the laboratory's test measurements, are accurate and reliable. In this regard, use of an accredited laboratory serves a function very similar to use of a certification organization. In section 431.25(a) of the proposed rule, the Department's objective is to provide options for determining compliance to manufacturers faced with a small number of existing third party laboratories. These options will continue to be offered to manufacturers in today's final rule.

The Department agrees with Reliance that the use of a certification program as a means for determining compliance could be more explicitly stated. The Department is therefore re-organizing and revising Section 431.24 of today's final rule, and adopting additional language in Section 431.123(a), to make clear that a manufacturer can use such a program to establish the efficiency of its motors and as a basis for certifying to DOE that the motors comply with EPCA requirements.

NIST asserts that the proposed rule would create two different compliance procedures, accreditation and certification, with unequal criteria for determining compliance with energy efficiency requirements. (NIST, No.10 at section 2.). Statistical sampling procedures and test data, NIST contends, should be uniform and based on proficiency testing under a round-robin type program, to assure a common basis for determining whether a motor is in compliance. According to NIST, test facility competence would be based on the requirement of laboratory accreditation by NVLAP to assure confidence in test data, and the validity, reliability, reproducibility, and accuracy of test measurements. The Department understands that NIST advocates that all efficiency testing of motors under EPCA be performed in laboratories accredited by NVLAP, including testing that is under the auspices of a certification program.

The Department notes that accreditation is being required under today's rule to satisfy the intent of the ''independent testing'' provision of section 345(e) of EPCA, and that section 345(e) allows use of an ''independent certification program'' as an alternative means of establishing compliance. In addition, the Department understands that a certification program is a *continuous* assessment to assure that new products and subsequent production conform to specified requirements. Under a certification program, such as the ones conducted by Underwriters Laboratories (UL) or CSA International (CSA), a motor manufacturer's production and testing operations would be evaluated and representative samples of electric motors would be tested to applicable standards. Following an initial verification, follow-up audits of motors and on-going testing by the manufacturer would be required. Such programs are in compliance with Federal law in Canada, and are accredited by the Standards Council of Canada, with whom NVLAP holds an agreement of mutual recognition.

The issue is one of confidence, that is, confidence that a manufacturer's production units are being produced in conformance with EPCA requirements. The Department believes that use of an independent certification program without testing in an accredited facility will provide adequate assurance of compliance with EPCA's energy efficiency requirements. Consequently, the Department is adopting the options for determining compliance that were set forth in the proposed rule.

As mentioned above, Section 345(c) of EPCA requires that compliance be certified through a testing or certification program that is ''nationally recognized.'' The proposed rule, at sections 431.26 and 431.27, provides criteria and general procedures for DOE recognition of accreditation bodies and certification programs, to meet this requirement. These sections have been incorporated into the final rule virtually unchanged. In addition, section 431.28 of the final rule also adds specific procedures, including an opportunity for public participation, that the Department will follow in considering petitions for recognition under sections 431.26 and 431.27.

Neither of these sections, however, addresses a situation where DOE has classified an organization as an accreditation body, or as a nationally recognized certification program, and the organization subsequently ceases to comply with the conditions for such classification.[8] Therefore, in the reopening notice, 63 FR 34766 (June 25,

[8] One of the conditions stated in the proposed rule is that the organization must have ''standards and procedures'' for carrying out accreditation or a certification program. 61 FR 60467, 60468 (November 27, 1996). The proposed rule contemplates, at sections 431.26(d) and 431.27(d) for example, that this condition would be met only if the Department found acceptable the organization's standards and procedures for carrying out its program. The final rule reinforces and clarifies this point by adding the word ''satisfactory'' before ''standards and procedures'' in sections 431.26(b)(1) and 431.27(b)(1).

1998), the Department proposed to add provisions to (1) notify an accreditation body or a certification organization of failure to comply with the conditions of section 431.26 or 431.27, respectively, (2) request appropriate corrective action, (3) provide an opportunity to respond, and (4) withdraw recognition. Also, the Department proposed to permit an accreditation body or certification organization to withdraw itself from recognition by the Department.

NEMA and ACEEE support the Department's procedure for notification and corrective action. Further, NEMA and ACEEE recommend that the rule also require DOE to notify manufacturers that use an accreditation body or certification program that recognition will be withdrawn, and to allow time for the manufacturer to change its procedures for determining compliance. (NEMA/ACEEE, No. 38 at pages 6 and 7.) In section 431.28 of today's final rule, the Department includes provisions for withdrawing recognition from an accreditation body or certification organization, and for publishing in the **Federal Register** notice of such action. However, because the Department would often be unaware of which manufacturers are using a particular accreditation body or certification organization, the final rule contains no provision for the Department to directly notify them of its action.

The final rule also does not incorporate language to specifically ''allow time'' for a manufacturer to change its compliance procedures when recognition has been withdrawn from an accreditation body or certification organization it is using. To the extent NEMA and ACEEE are suggesting that, during a period after such withdrawal of recognition, the rule should permit a manufacturer temporarily to distribute an electric motor without certifying its compliance with the applicable standard, or to certify the motor without using an accredited laboratory or a recognized certification program, DOE believes a sufficient showing has not been made to justify such an approach. In addition, the proposed and final rules do not *per se* require a manufacturer to continuously maintain an accredited laboratory. And although they contemplate continuous participation in a certification program when such a program is used, no provision precludes a temporary lapse in such participation caused by a withdrawal of recognition. Hence, the Department believes that the final rule will allow a manufacturer a reasonable amount of time to replace an accrediting body or certification program that has lost its recognition. Finally, the Department's energy conservation program has not had experience with this type recognition requirement, and the Department is uncertain as to the effects of possible withdrawals of recognition. For these reasons, the Department will address consequences to manufacturers of withdrawals of recognition on a case by case basis, as necessary, rather than by including specific language on this issue in today's final rule. DOE will consider amending the rule to include such language only if experience indicates a need to do so.

3. Issues Concerning Use of Certification Organizations

As discussed above, proposed section 431.24 prescribes for compliance testing (including testing to substantiate an AEDM) criteria for selecting basic models for testing, and a sampling plan for picking the particular units to be tested. These requirements apply both when a manufacturer establishes a motor's efficiency without using a certification program (i.e., required testing is performed in an accredited laboratory), and when a manufacturer uses a certification program. 61 FR 60466–67 (November 27, 1996).

In their comments on the NOPR, both NEMA and Reliance Electric asserted that DOE should not impose its sampling plan for compliance testing when a manufacturer uses a certification program to establish compliance. They stated that such a program's own testing and sampling procedures will give adequate assurance of the accuracy of any reported efficiency level, and NEMA recommended that the Department review and approve a certification program's testing procedures before according the program ''nationally recognized'' status for purposes of EPCA. (Reliance, No. 11 at pg. 7; NEMA, No. 18 at pgs. 8–9). Recognizing that these contentions had merit, in the reopening notice the Department proposed that, when a manufacturer establishes a motor's efficiency under EPCA through a certification program, the final rule would not require use of the rule's criteria for identifying basic models for compliance testing, or its sampling provisions for selecting units for such testing. 63 FR 34765 (June 25, 1998). In addition, DOE proposed that review and approval of a certification program's criteria for selecting basic models for testing, and its sampling plan, would be included in the Department's evaluation of whether to grant a program ''nationally recognized'' status for purposes of EPCA. The NEMA comments support these DOE proposals (NEMA, No. 38 at C., pages 4 and 5), and they are incorporated into today's rule.

NEMA also asserts that ''DOE should accept existing certifications that are in good standing'' when the final rule is published. (NEMA, No. 38 at C., page 5.). Initially, the Department notes that a third party certification would not normally be provided to it. Rather, under section 431.123 of today's final rule, each manufacturer must submit its own Compliance Certification(s) to DOE, although such Certification may be *based on* an efficiency certification provided by a certification program. Consistent with NEMA's suggestion, however, under both the proposed and final versions of section 431.123, the Compliance Certification may contain motor efficiency information developed before the effective date of the rule. Thus, a Compliance Certification could be based on a third-party efficiency certification that (1) was issued by a DOE-recognized certification program prior to the effective date of the rule, (2) was based on use of the criteria and procedures incorporated into the rule, and (3) remains in effect at the time of the Compliance Certification. This assumes, of course, that information in the third-party certification supports the representations in the Compliance Certification. Moreover, the certification organization used by the manufacturer must receive recognition from DOE under section 431.27 after the effective date of the rule, even though it met the criteria for such recognition before the effective date of the rule. In sum, the Department does not intend to conclude that a Compliance Certification violates 431.123 solely because the applicable determinations underlying the Certification, such as those described in section 431.123(b)(1)(ii), were made before the effective date of the rule.

Proposed section 431.25(a), *Testing laboratories*, provides in essence that all testing of a basic model to meet the requirements of section 431.24, *Units to be tested*, shall be carried out in an accredited laboratory, *unless* a certificate of conformity for that basic model is obtained from a certification program classified by DOE as nationally recognized. 61 FR 60467, 60468–69 (November 27, 1996). This applies, for example, to testing required by proposed section 431.24(b)(3) to substantiate an AEDM. Under these provisions, therefore, when a manufacturer uses a certification program to establish the efficiency of a basic model, testing of the basic model, including testing used to substantiate an AEDM, would not need to be performed in an accredited laboratory. Reliance

Electric asserts that the proposed rule is unclear on this point. (Reliance, No.11 at pgs 5 and 6; see ACEEE/NEMA, No. 38 at pg. 5). The Department has revised proposed sections 431.24 and 431.25 in the final rule to further clarify that testing of a basic model to substantiate an AEDM need not be in an accredited laboratory when a certification program certifies the basic model's efficiency.

Reliance Electric also agrees with the proposal that five basic models be tested as part of the initial substantiation of an AEDM, but that the methods for initial substantiation of an AEDM under section 431.24(b)(3) should otherwise be the same as the methods permitted under section 431.24(b)(4)(i)(A)–(C) for subsequent verification of an AEDM. (Reliance, No.11 at pgs. 5 and 6). Two of the methods permitted for such subsequent verification are testing in an accredited laboratory and use of a certification organization. As indicated above and as the final rule makes clear, both can be used to initially substantiate an AEDM. The third method for subsequent verification of an AEDM, however, is the use of a professional engineer, and the Department does not agree it is appropriate for initial substantiation of an AEDM.

First, the Department believes that initial substantiation of an AEDM should be inherently stringent because an AEDM could underlie compliance determinations for many motors. The Department believes that such stringency will exist when the initial substantiation of an AEDM is based on testing in an accredited laboratory that meets the requirements of section 431.25, or on use of a certification program classified by DOE as nationally recognized under section 431.27. However, having a professional engineer review the results of the manufacturer's testing, and initially certify the accuracy of the AEDM, would not be as inherently rigorous, or provide the same likelihood of uniform results. Both the proposed and final rules allow the use of a professional engineer for verification of an AEDM because that would be only a check on the initial determination of the AEDM's validity, and would be applied to a limited number of basic models. In addition, the provisions in DOE's rule for initial substantiation of an AEDM implement the statutory requirement for a manufacturer to certify, through an independent testing or certification program nationally recognized in the United States, that an electric motor meets the applicable efficiency standard. It appears to the Department that use of a professional engineer for initial substantiation of an AEDM would fail to meet this statutory requirement. A professional engineer neither carries national recognition nor is the equivalent of a certification program, and proposed section 431.24(b)(4)(i)(C) does not require the professional engineer to perform testing.

Finally, the Department proposed in the reopening notice to require that, when a motor's efficiency rating is derived from use of an AEDM, the AEDM could not be subsequently verified by the certification organization that had initially certified the motor's efficiency rating. 63 FR 34765 (June 25, 1998). NEMA and ACEEE jointly assert that DOE should permit the use of the same certification organization for both substantiation and verification of an AEDM. To require one certification organization to be used for substantiation and a different one for verification of an AEDM would cause manufacturers to participate in multiple certification programs to accomplish the same thing. (NEMA/ACEEE, No. 38 at page 5). The Department understands, from the NEMA/ACEEE comments, that the proposal contemplated in the reopening notice would be burdensome for manufacturers. Therefore, the Department will not adopt this proposal in the final rule.

4. Compliance Testing When a Manufacturer Does Not Use a Certification Program (Independence and Performance of an Accredited Laboratory, Selection of Basic Models for Testing, Sampling Plan) and Enforcement Testing Sampling Plan

a. Accredited Laboratories

As discussed above, the Department proposed that a manufacturer could meet the statutory provision for certification through an ''independent testing program'' by using a laboratory, operated by either a third party or the manufacturer, that has been accredited to perform the DOE test procedures. Commenting on the meaning of ''independence,'' ACIL opines that the proposed rule implies that once a laboratory is accredited, its independence is assured. ACIL asserts that while accreditation assures a laboratory's technical competence, and that testing will be conducted free from certain marketing pressures, it does not mean that the laboratory is autonomous. (ACIL, No. 7., and Public Hearing, Tr. pgs. 124–131.).

Independence is a criterion, used for example under NVLAP accreditation procedures, to verify that a laboratory is able to ''maintain an independent decisional relationship between itself and its clients, affiliates, or other organizations so that the laboratory's capacity to render calibration or test reports objectively and without bias is not adversely affected.''[9] The Department believes this means that an accredited laboratory will be independent in the sense that it will perform tests without influence ''by marketing and production concerns,'' and ''with assurance that test results are accurate, valid, and capable of being replicated.'' 61 FR 60455 (November 27, 1996). The Department agrees with ACIL that accreditation assures technical competency, and does not confer on a laboratory independence in the sense of autonomy.

WSU/WSD expressed concern about a manufacturer's own (accredited) laboratory sufficing as an ''independent'' laboratory. WSU/WSD posited that if subsequent testing by outside laboratories finds efficiencies being overstated, then the manufacturer's laboratory should be subject to disaccreditation. (WSU/WSD, No. 5, p.6).

Section 431.26 of the proposed rule provides criteria and procedures by which the Department of Energy would recognize an accreditation body. To meet the conditions of proposed section 431.26, the accreditation body would have to assume the responsibility (1) to periodically audit and review a testing laboratory to verify continued compliance with the conditions of its accreditation, and (2) to make provision for withdrawal of accreditation where a testing laboratory fails to comply with the conditions of its accreditation, including failure to provide accurate test results. Similarly, section 285.24, ''Denying, suspending, and revoking accreditation,'' implicitly makes such provision in the NIST/NVLAP Handbook 150, ''Procedures and General Requirements.'' Furthermore, under section 285.22(b)(7) of ''Assessing and evaluating a laboratory'' in NIST/NVLAP Handbook 150–10, ''Efficiency of Electric Motors,'' where problems are indicated by proficiency testing and the test laboratory fails to resolve the problems in a timely manner, NIST/NVLAP may revoke or suspend its accreditation of that laboratory. In the final rule, the Department has added language to section 431.26 to explicitly provide that, to be recognized by DOE, an accreditation body must periodically audit laboratories it accredits, and withdraw accreditation from those that do not adhere to the conditions of their

[9] NIST Handbook 150, *National Voluntary Laboratory Accreditation Program Procedures and General Requirements* March 1994, section 285.32(a)(10), pg. 20.

accreditation. Moreover, where a manufacturer has certified its electric motors to be in compliance with EPCA energy efficiency standards based on testing in an accredited laboratory, including its own laboratory, and subsequently its motors are determined not in compliance under section 431.127, ''Enforcement,'' that manufacturer would be required, for example, to immediately cease distribution in commerce of that basic model motor, under section 431.128 of the rule.

b. Selection of Basic Models for Testing

Proposed section 431.24(b)(1)(i)–(ii) provides criteria that a manufacturer must use to decide which basic models to test. Subsection 431.24(b)(1)(i)(A) states that two of the basic models selected for testing must be among the five basic models with the highest unit volumes of production by the manufacturer in the prior year. Washington State opines that the unit volume should be horsepower weighted, otherwise there would be a bias toward the more numerous small motors. Also, Washington State asserts that the Department of Energy should retain the right of selecting basic models, whether to verify compliance through actual testing or application of an alternative efficiency determination method. (WSU/WSD, No. 5 at pg. 6, items II.P. and Q.).

The Department expects that the basic models with the highest unit volumes of production would be those in the lower horsepower ratings. If the Department were to require *all* basic models selected for testing to be from those with the highest unit volumes of production, then Washington State's concern might be significant. However, only two of the basic models selected must be from those with the highest unit volumes of production. Other criteria for selection are that the basic models be of different horsepowers and different frame series. Thus, for example, under today's final rule, the two basic models with the highest volume of production must, if possible, span two different frame series. (See discussion below on use of frame series rather than frame size.) Therefore, the Department declines to adopt the WSU/WSD suggestion to weight by horsepower the basic models for testing under section 431.24(b)(1)(i)(A) of today's final rule. Furthermore, because it would not be feasible for the Department to select models for compliance testing, it does not intend to retain the right to make such selection as suggested by WSU/WSD. Nevertheless, under the final rule the Department of Energy can select models for testing to verify an AEDM under section 431.24(b)(5)(iii), and can direct enforcement testing of any basic model if warranted under section 431.127 of today's final rule.

Also, Reliance Electric opines that the requirement in proposed section 431.24(b)(1)(i)(A), that basic models selected based on production during the ''prior year,'' might be inappropriate for the initial years in which 10 CFR Part 431 for electric motors becomes effective. For example, according to Reliance Electric, selection by a manufacturer in 1998 of the basic models produced in the highest unit volumes by that manufacturer in 1997 might include basic models which have efficiencies below EPCA levels. Consequently, the basis of substantiation of the AEDM would be dependent on basic models with efficiency levels that can no longer be manufactured for sale in the United States. (Reliance, No. 11 at pg. 1).

Had this rule gone into effect prior to the latter part of 1998, Reliance's point would have been well taken. EPCA's efficiency standards, however, became applicable to electric motors on October 24, 1997, and by the time this rule becomes effective the standards will have been in effect for most motors for at least a year. Moreover, because today's rule does not require manufacturers to certify compliance until 24 months after its effective date, the Department presumes that most testing covered by this part of the rule (i.e., testing in accredited laboratories) will occur during calendar year 1999 or later. Therefore, it is unlikely that models selected for testing under this criterion would have efficiency levels below EPCA levels. Nevertheless, some manufacturers might have begun testing prior to the end of 1998, and the Department in its Policy Statement acknowledges the possibility that some motors could continue to be manufactured in non-compliance with EPCA standards after October 1998. Therefore, today's rule allows manufacturers that began testing in 1998 to select units for testing under this criterion based on 12 months of production that begins on November 1 or December 1 of 1997, and provides that no motor manufactured in noncompliance with EPCA standards, pursuant to the Policy Statement or otherwise, shall be considered under this criterion.

The Department has also reviewed section 431.24(b)(1)(i)(C) and has determined that motors selected for testing should be from different *frame number series,* rather than frame *sizes,* when possible. (Frame series designations are set forth in NEMA MG1 Table 11–1, *Medium Machine Frame Numbering.*) Motors such as a 143T and 145T, for example, are different frame sizes but are in the same frame series and are quite similar in size, whereas 143T and 182T, for example, are in different frame number series and are very different in size. Under the proposed rule, a manufacturer could test motors that are all similar in size, by selecting motors in one or possibly two frame series. This would defeat the Department's goal of having a manufacturer establish compliance by testing a range of motor sizes. Also, because there are only nine frame number series covered by EPCA, requiring tested basic models to be from different number series, when possible, could cover over half of the sizes of motors made by any manufacturer. The Department understands that this would include a greater percentage of the product line for manufacturers not producing motors over the full range of ratings covered by EPCA. The Department also believes that selecting basic models based on different frame number series would show an AEDM to be accurate over a wider range of motors to which it is applied, thereby covering a greater expanse of basic models produced and without adding burden to the manufacturer. Therefore, the Department modifies proposed section 431.24(b)(1)(i)(C) to read ''frame number series'' in today's final rule.

c. Sampling Plans for Compliance and Enforcement Testing

Sampling plans for compliance and enforcement testing are at proposed sections 431.24 and 431.27(c), respectively. They are intended to provide statistically meaningful sampling procedures for conducting tests, so as to reduce the testing burden while giving sufficient assurance (1) in the case of the compliance plan, that the true mean energy efficiency of a basic model (i.e., the average efficiency of all units manufactured) meets or exceeds the applicable energy efficiency standard established in EPCA and the basic model's labeled efficiency level, and (2) in the case of the enforcement plan, that an electric motor found to be in noncompliance will actually be in noncompliance. The November 27, 1996 **Federal Register** notice (61 FR 60440), at section XIII.C.3. and 8., *Issues for Public Comment,* requested comments on these proposed sampling plans.

In response, the National Electrical Manufacturers Association (NEMA) and motor manufacturers raised issues concerning the proposed sampling plans, and NEMA submitted to the

Department alternative approaches, one for compliance testing and another for enforcement testing. NISTIR 6092 ''Analysis of Proposals for Compliance and Enforcement Testing Under the New Part 431; Title 10, Code of Federal Regulations,'' January 1998, (the NIST analysis) compared the DOE's proposed rule and the NEMA proposals through model calculations of their operating characteristics, i.e., the estimated probability of demonstrating compliance for a given true average of efficiency.

In the reopening notice, the Department stated that, although it continued to consider adoption of the NOPR's sampling plans, it was also considering adopting instead NEMA's proposed sampling plans, or variations of those sampling plans. 63 FR 34762–64 (June 25, 1998). Comments and data were requested concerning the accuracy and workability of NEMA's proposals.

(1) Sampling Plan for Compliance Testing

Section II.B.2. of the reopening notice, 63 FR 34764 (June 25, 1998), requests comments on whether DOE should adopt the NEMA proposal for compliance testing, or alternatively, adopt the NEMA proposal but substitute a coefficient of 1.03 or 1.01 for the 1.05 coefficient in the NEMA formula. Also, the reopening notice states that DOE could adopt the NEMA proposal, with or without change in the 1.05 coefficient, but with a requirement that the number of units to be tested be fixed, at five motors for example.

The American Council for an Energy Efficient Economy (ACEEE) and NEMA jointly advocate adoption of the ''NEMA proposal,'' [10] as it is referred to in the reopening notice, 63 FR 34763 (June 25, 1998), for compliance testing as well as enforcement testing. As to the sampling plan for compliance at proposed section 431.24(b)(1)(iii), 61 FR 60467 (November 27, 1996), ACEEE and NEMA contend that, given the actual variations in the performance of electric motors and the accuracy of any test procedure to measure efficiency, ''requiring the average efficiency of any sample to be not less than the represented efficiency places an unreasonable burden on manufacturers and would require that all electric motors be designed to substantially exceed the represented value [of efficiency] to assure that any sample would pass the compliance test.'' The same concerns would be raised, they contend, by reducing the 1.05 coefficient in the NEMA proposal for compliance, to a number such as 1.03 or 1.01. (ACEEE/NEMA, No. 38 at pg.3). Also, ACEEE and NEMA recommend that the Department not specify a fixed sample size, but rather specify a *minimum* sample size of five units for the compliance sampling plan. Further, a sample size of fewer than five units should be permitted when the basic model is of a rare design for which fewer than five units would be produced over a reasonable period of time. ACEEE and NEMA assert that the absolute pass or fail nature of their joint sampling plan proposal would also not cause undue burden on motor manufacturers. (ACEEE/NEMA, No. 38 at pgs. 3 and 4).

Sterling Electric, Inc., asserts that it is a small manufacturer with ''limited resources,'' and advocates a ''simple statistical procedure'' to verify that its motors comply with EPCA efficiency standards. (Sterling, No. 13).

Based on the NIST analysis, and on further review of the sampling criteria for compliance testing in the proposed rule and in the NEMA proposal, the Department believes that the NEMA proposal and the comments by ACEEE, NEMA and Sterling Electric have substantial merit. To begin with, the Department has determined that the NEMA proposal for compliance testing provides statistically meaningful sampling procedures for conducting tests for electric motors, so as to reduce the testing burden while giving sufficient assurance that the true mean energy efficiency of a basic model (i.e., the average efficiency of all units manufactured) meets the motor's represented energy efficiency level.

Furthermore, the NEMA proposal is closely aligned with existing industry approaches for rating and labeling the efficiency of electric motors. Under NEMA Standard MG1, a manufacturer determines the nominal efficiency of each design of electric motor, and each individual motor of such design must be labeled with that value and have a corresponding minimum efficiency. Manufacturers design a motor to perform at or above its labeled nominal efficiency and, generally, the nominal efficiency will closely reflect the actual average efficiency of motors of that design. Consistent with this approach, under the NEMA proposal there is a high probability that, if the entire population of a basic model of motor averages a given efficiency, tests of a sample of such motors will indicate that the basic model performs at that level. Under DOE's proposed compliance sampling plan, however, such a high probability would not exist. The NEMA compliance sampling proposal also provides that a basic model cannot be determined to meet a given nominal efficiency level if the measured efficiency of *any* of the test specimens is below a level analogous to the minimum efficiency specified for a motor in MG1. Thus, the NEMA proposal has the advantage of incorporating methods that manufacturers are familiar and comfortable with.

In addition, the efficiency requirements mandated by EPCA for electric motors consist largely of industry standards contained in NEMA MG1. Section 343(a)(5)(A) of EPCA prescribes the test procedure contained in MG1, the mandatory efficiency standards in section 342(b)(1) are taken from MG1, and the definitions of ''electric motor'' and ''nominal full load efficiency,'' in sections 340(13)(A) and (H), respectively, must be construed with reference to MG1. Thus, the Congress apparently intended that efficiency requirements for motors would adhere to industry standards where possible, see also EPCA section 343(a)(5)(B), providing further support for DOE's adoption of the NEMA sampling proposal for compliance testing.

The Department is also persuaded by the contention of NEMA and ACEEE that the compliance sampling provisions in the proposed rule could unreasonably burden motor manufacturers. These provisions could in effect require that electric motors be designed to exceed represented efficiency values, and values prescribed by section 342(b)(1) of EPCA, which DOE believes would be unwarranted. To begin with, the amount of such required ''overdesign'' could be substantial. For example, NIST states in its analysis that, if two units of a basic model are tested, for the model to have a 90 percent probability of being found in compliance with a given nominal efficiency, the average efficiency of the entire population would have to be above the next higher nominal value. Testing large numbers of units would be one way, under the DOE proposal, to increase the likelihood that the sample tests would indicate a given efficiency level, and to reduce the need for ''overdesign.'' This would not be an option, however, for the many basic models of electric motor that are produced in small quantities. Finally, DOE's understanding is that, given the nature of the ''electric motors'' covered by EPCA, the burdens created by any

[1] ''Proposal for the Method of Determining Compliance and Enforcement for Electric Motors Under the Efficiency Labeling Program of DOE 10 CFR Part 431,'' NEMA Motor and Generator Section, Friday, April 18, 1997 (Docket No. EE–RM–96–400, No. 23) (the ''NEMA proposal'').

need to ''overdesign'' their efficiency might well be far greater than for all or most other products regulated under EPCA. (For example, increasing the quantity and quality of materials in such a motor are virtually the only ways to improve its efficiency, and any changes to improve efficiency are highly likely to necessitate other changes in the product.)

For all of these reasons, in today's final rule the Department adopts the NEMA sampling proposal for compliance testing of electric motors, with a required minimum sample size of five units. A minimum sample size of five units shall be required for basic models for which more than five units would be produced over a reasonable time (approximately 180 days). Where fewer than five units of a basic model are produced over a reasonable time, then each unit shall be tested for compliance. This latter provision is designed to address a situation where a basic model is of a rare design, such as a design that is not mass produced or is built to order, and for which manufacturing and delivery schedules are uncertain.

(2) Sampling Plan for Enforcement Testing

DOE's proposed sampling plan for enforcement testing at section 431.127(c), Sampling, and appendix B of subpart G, 61 FR 60472, 60474–5 (November 27, 1996), assumes that the true mean full load efficiency and standard deviation of the motor efficiencies are not known. The proposed sampling plan establishes benchmarks for the standard error in the mean, based on the existing NEMA guidelines for identifying motor efficiency levels at NEMA MG1–12.58, and NEMA Table 12–8. Under the NEMA guidelines, no single unit can have energy losses more than 20 percent greater than the average losses for that type of motor, i.e., a 20 percent loss tolerance is permitted for a given unit but the average must still be met. Section III.G. of the preamble to the proposed rule states the Department's belief that the 20 percent loss tolerance is reasonable and meaningful. 61 FR 60459–60, 60474–75 (November 27, 1996). NEMA's sampling plan for enforcement testing is very similar to its plan for compliance testing, and provides that the same conditions must be met to establish that a motor complies with the applicable EPCA standard, except that the coefficient is based on the total variation in energy efficiency permitted by NEMA MG 1 paragraph 12.59, ''Efficiency Levels of Energy Efficient Polyphase Squirrel-cage Induction Motors.''

Section II.B.2. of the reopening notice describes the NEMA sampling plan for enforcement, 63 FR 34763 (June 25, 1998), and states that DOE could adopt the NEMA plan with or without modification of the coefficient, 63 FR 34764 (June 25, 1998). Alternatively, the reopening notice states, DOE could retain the sampling plan for enforcement in the proposed rule with the statistical confidence level increased from 90 percent to 99 percent, or some other value higher than 90 percent. Also, as further discussed below in Section E.2, DOE stated its intention in the reopening notice that the enforcement procedures in the final rule, including the enforcement sampling plan, would apply to allegations both of labeling violations as well as non-compliance with the applicable standard for efficiency. 63 FR 34765–66 (June 25, 1998).

As with sampling for compliance testing, ACEEE and NEMA jointly advocate adoption of the April 18, 1997, ''NEMA proposal'' as it pertains to enforcement sampling. (ACEEE/NEMA, No. 38 at pg. 4). ACEEE and NEMA assert that the only difference between their joint proposals for compliance and enforcement are the coefficients that represent the variation in total losses for the sample or population. They opine that the values for enforcement are greater in order to account for the added variation that results when efficiency is determined through testing at different test facilities. They also state that their enforcement sampling plan would apply to both the accuracy of the nameplate efficiency, as well as compliance with the applicable EPCA efficiency value. (ACEEE/NEMA, No. 38 at pgs. 5–6).

Based on the NIST analysis of the operating characteristics of the enforcement sampling plan proposed by NEMA, at NISTIR 6092 (January 1998), pages 4 through 7, the Department finds that the industry plan for enforcement sampling makes little distinction between energy efficiency performance at and significantly below an efficiency standard prescribed by EPCA. According to the NIST analysis of the NEMA proposal for enforcement testing, the NEMA plan may not adequately differentiate between significant levels of performance. For example, there appears to be no appreciable change in the outcome of testing between a test of a basic model for which the true mean efficiency is equal to a given nominal value and a test of a basic model for which the true efficiency is equal to the next lower NEMA nominal value. Also, the Department is not convinced that the added variation allowed under the NEMA proposal for enforcement would necessarily account for testing variations at different test facilities.

The proposed sampling plan for enforcement is designed to be different from the sampling plan for compliance. It is based on the *t*-statistic, which is used at appendix B to subpart F of 10 CFR Part 430—Sampling Plan for Enforcement Testing, and is tailored for enforcement testing of electric motors, based upon NEMA MG1–1993 paragraphs 12.58 and 12.59. According to NIST, the *t*-test is not strongly influenced by the exact form of the underlying distribution, it is a widely accepted basis for a testing protocol, and the likelihood of a correct determination increases with sample size. The Department finds that the likelihood of a correct determination increasing with sample size is consistent with the ACEEE/NEMA recommendation that a *minimum* of five units be tested, although ACEEE/NEMA opine that there should be no upper limit placed on the sample size. As a practical matter, the Department has determined that the upper limit of the sample size should be fixed at 20 units, as it is in appendix B to subpart F of 10 CFR Part 430. Based on NISTIR 6092, pages 6–7, the Department agrees with NIST that it is highly unlikely that a motor that is labeled in accordance with the NEMA MG1 energy efficiency standards would require testing beyond the initial sample of five, and that any risk of additional testing is more than offset by the increased value of the test in assuring that the manufacturer's interests are protected. Moreover, if enforcement testing is carried on up to 20 units, there would be likely indications of other fundamental problems in the manufacture and/or testing of such basic model which could be ascertained and corrected through other means, such as examination of the underlying data according to the aforementioned ''test notice'' procedure described at 10 CFR 431.127(a)(1).

The Department agrees with NIST, NISTIR 6092 at page 6, that the performance of the Sampling Plan for Enforcement Testing with the statistical confidence of 90 percent could imply that the likelihood of a false conclusion that a product is not in compliance could be as high as 10 percent, and that this level of assurance may not adequately protect the manufacturer's interests. The Department has considered various levels of statistical confidence, other than 90 percent, and has determined that the Sampling Plan for Enforcement Testing in today's final rule will be based on 97.5 percent

statistical confidence, as has been established at appendix B to subpart F of 10 CFR Part 430.

In sum, with this modification, the Department concludes that the Sampling Plan for Enforcement Testing, as set forth at proposed appendix B to subpart G of Part 431, will apply to a test of whether an electric motor's nominal full load efficiency complies with section 342(b)(1) of EPCA as well as to a test of the accuracy of the labeled efficiency of a motor.

D. Energy Efficiency Standards

Section 342(b)(1) of EPCA, 42 U.S.C. 6313(b)(1), prescribes energy efficiency standards for electric motors that are 1 through 200 horsepower. Section 431.42 of the proposed rule incorporates these efficiency standards, and for each horsepower rating to which a group of standards applies, states the equivalent kilowatt rating which those standards also apply. The NOPR proposes the following criteria for determining the standard that applies to an electric motor that has a horsepower or kilowatt rating between two horsepowers or kilowattages listed consecutively in section 342(b)(1) of EPCA and section 431.42(a) of the proposed rule: (1) a horsepower at or above the midpoint between the two consecutive horsepowers would be rounded up to the higher of the two horsepowers; (2) a horsepower below the midpoint between two consecutive horsepowers would be rounded down to the lower of the two horsepowers; or (3) a kilowatt rating would be directly converted from kilowatts to horsepower and the resulting horsepower rounded as stated above. 61 FR 60470 (November 27, 1996).

1. Non-standardized Horsepower Ratings

Washington State University Cooperative Extension Energy Program and the Washington State Department of Community, Trade and Economic Development (WSU/WSD) address DOE's concern, in the preamble to the proposed rule at section III.D.2, ''Standards for Horsepowers Not Listed in Statute, and for Non-standard Kilowatt Ratings,'' 61 FR 60450 (November 27, 1996), about efficiency levels that would be applicable to electric motors manufactured to non-standard horsepower ratings. WSU/WSD assert that the output rating of an electric motor is not the maximum horsepower the motor will produce but is a nominal output power at which nameplate and catalog performance parameters are tabulated. Most motors, they explain, can operate near nameplate efficiency at loads down to 50 percent and can sustain operation in ideal conditions at power demand 15 percent higher than their rating. They appear to recommend that a motor with a rated horsepower that exceeds a power rating specified in EPCA, by greater than one percent, should be required to meet the efficiency rating prescribed for the next higher horsepower specified in EPCA. In other words, WSU/WSD apparently advocate the one percent point for rounding up. (WSU/WSD, No. 5 at page 5, item D.).

The issue here is whether to round up or down from the mid-point between two horsepowers, as DOE proposed at section 431.42(b) in the rule, or from the 1 percent point, as WSD suggests. The WSU/WSD approach to rounding up is similar to the NEMA position described at page 60450 in the preamble to the proposed rule, where a motor with rating between two of the horsepower ratings specified by EPCA would be required to meet the efficiency standard for the next highest horsepower. For the reasons stated in the preamble, the Department continues to believe that such rounding up to the next energy efficiency level could make it very difficult for some sizes of motors to meet the statutory energy efficiency levels and could have the effect of banning or limiting their use. 61 FR 60450 (November 27, 1996). This would be true for an electric motor used as a component of a compressor, for example, where the compressor is designed around the size of the motor to allow for air flow and cooling requirements. Such space requirements and restrictions could prevent the use of a larger motor, such as an electric motor that must be physically larger to meet the next higher energy efficiency level. (Kaeser Compressors, No. 48). Also, the Department believes that rounding up or down from the mid-point is not sufficient incentive for a manufacturer to produce new intermediate horsepower ratings, such as the 12 horsepower rating contemplated by WSU/WSD. If that were to occur, however, the Department could consider amending the rule to adopt alternative rounding approaches.

2. Motor Horsepower and Standard Kilowatt Equivalent

The joint comments of WSU/WSD recommend that an electric motor rated in kilowatts be allowed to meet the energy efficiency of the nearest lower horsepower equivalent if the motor's kilowatt rating is within one percent of that lower horsepower equivalent, and not be required to meet the efficiency rating of the next higher horsepower (WSU/WSD, No. 5 at II.D.).

The Department believes that WSU/WSD may have misconstrued section 431.42 in the proposed rule. They incorrectly state that ''the Department proposes that IEC motors with ratings falling between two standard horsepower ratings should be required to meet the more stringent rating of the higher horsepower.'' (WSU/WSD, No. 5 at II.D.). First, as to an electric motor with a *standard* kilowatt rating, the Department proposed in section 431.42(a) that the required efficiency level be that prescribed for motors with the equivalent horsepower rating specified in IEC Standard 60072–1. 61 FR 60449–50, 60469 (November 27, 1996). As demonstrated by examination of these specified equivalencies and the exact conversions of standard kilowatt ratings to horsepowers—no standard kilowatt rating exactly equals a standard horsepower rating—an IEC motor with a standard kW rating must sometimes meet the efficiency standard for the next higher horsepower and sometimes for the next lower. *Id.* In all cases the standard it must meet is prescribed for a horsepower that is very close to an exact conversion from its kilowatt rating. *Id.* Second, as to motors with *non-standard* kilowatt ratings, section 431.42(b)(3) of the proposed rule provides that the kilowatt rating would be arithmetically converted to its equivalent horsepower rating, and then, based on whether the motor falls above or below the *midpoint* between consecutive horsepower ratings, would be required to meet the corresponding *higher or lower* energy efficiency level, respectively. The Department believes that such rounding from the midpoint between two non-standard kilowattages further addresses WSU/WSD's concern about requiring IEC motors to meet the next higher levels of efficiency. Therefore, the Department will make no change in this regard in today's final rule.

3. World Trade Organization (WTO) Agreements and the Trans Atlantic Business Dialogue (TABD)

Zentralverband Elektrotechnik-und Elektronikindustrie e.V. (ZVEI) advocates that the Department's standards regulations for electric motors be set up according to the principles of the WTO and the TABD, using international standards as much as possible. (ZVEI, No. 37 pg. 2).

The energy efficiency test procedures and standards for electric motors are established by sections 343(a)(5)(A) and 342(b)(1), respectively, of EPCA. To the extent possible under EPCA, the

proposed rule takes international requirements into account. Section 431.42, *Energy efficiency standards and effective dates,* of the proposed rule, for example, prescribes the EPCA energy efficiency levels in terms of both horsepower and equivalent kilowatt ratings based on IEC Standard 60072–1. Similarly, the definition of ''electric motor'' in section 431.2 of the proposed rule uses various descriptive terms in the definition which are followed by the parenthetical ''IEC'' as referenced to the IEC Standards 60034–1, 60034–12, 60050–411 and 60072–1. Also, sections 431.26 and 431.27, which pertain to Department of Energy recognition of accrediting bodies and certification programs, cite ISO/IEC Guides 25, *General requirements for the competence of calibration and testing laboratories,* 27, *Guidelines for corrective action to be taken by a certification body in the event of either misapplication of its mark of conformity to a product, or products which bear the mark of the certification body being found to subject persons or property to risk,* 28, *General rules for a model third-party certification system for products,* 58, *Calibration and testing laboratory accreditation systems—General requirements for operation and recognition,* and 65, *General requirements for bodies operating product certification systems.* There is no change to such provisions in today's final rule.

4. Electric Motors as Components of Systems

Section 342(b)(1) of EPCA, 42 U.S.C. 6313(b)(1), imposes efficiency standards for ''each electric motor manufactured (alone or as a component of another piece of equipment).'' Consistent with the above provision of EPCA, the proposed rule covers every ''electric motor'' that is manufactured, regardless of whether it is manufactured ''alone,'' and then inserted into another piece of equipment, or manufactured ''as a component of another piece of equipment.''

York International (York) asserts that that standards imposed by section 342(b)(1) of EPCA do not apply to motors used as components in certain commercial heating, ventilating, and air-conditioning equipment covered by the energy efficiency standards at section 342(a) of EPCA. (York, No. 6)

Section III.D.3., ''Electric Motors as Components of Systems,'' 61 FR 60451 (November 27, 1996), of the preamble to the proposed rule, addresses concerns from the Air-Conditioning & Refrigeration Institute similar to those of York. The Department finds no provision in the requirements for system efficiency at section 342(a) of EPCA that explicitly or implicitly renders the efficiency standards in section 342(b)(1) inapplicable to motors used in air conditioning or other equipment covered by section 342(a). Consequently, there is no change in today's final rule.

E. Labeling

1. Statutory Provisions

Section 344(a) of EPCA provides that, if the Department has adopted test procedures for a type of ''covered equipment,'' such as motors, it must prescribe a labeling rule for that equipment. Section 344(b) provides that such rule must require disclosure of the motor's energy efficiency, and may require disclosure of estimated operating cost and energy use, determined in accordance with the test procedures. Section 344(c) authorizes inclusion in the rule of additional requirements ''likely to assist purchasers in making purchasing decisions,'' such as requirements for display of the label, providing information as to energy consumption, and disclosing in printed matter efficiency information required to be on labels.

Section 344(d) of EPCA, 42 U.S.C. 6315(d), requires that within 12 months of establishing test procedures, ''the Secretary shall prescribe labeling rules * * * applicable to electric motors taking into consideration NEMA Standards Publication MG1–1987.'' Such rules shall require that electric motors be labeled to ''(1) indicate the energy efficiency of the motor on the permanent nameplate attached to such motor; (2) prominently display the energy efficiency of the motor in equipment catalogs and other material used to market the equipment; and (3) include such other markings as the Secretary determines necessary, solely to facilitate enforcement of the standards established for electric motors under section 342.''

All of the foregoing provisions are subject to section 344(h) of EPCA, 42 U.S.C. 6315(h), which states in essence that no labeling rule shall be promulgated for a type of covered equipment unless (1) such labeling is technologically and economically feasible with respect to such class; (2) significant energy savings will likely result from the labeling; and (3) the labeling is likely to assist customers in making purchases.

2. Provisions of Regulation

Section 431.82(a) of the proposed rule sets forth efficiency labeling requirements for the permanent nameplate of an electric motor. Proposed section 431.82(a)(1) and (2), requires the nameplate to display the motor's nominal full load efficiency and the Compliance Certification number, and states how such information is to be displayed. Proposed section 431.82(a)(3) allows the words ''energy efficient,'' or the encircled lower case letters ''ee,'' [11] or some comparable designation or logo, to be displayed at the manufacturer's option on a motor that meets the applicable efficiency standard and compliance certification requirements. Section 431.82(b) sets forth the requirements for disclosure of information in marketing materials. Section 431.82(c) proposes that certain information be disclosed on import documents. Section 431.82(d) deals with voluntary compliance with the aforementioned labeling requirements for motors that would otherwise not be covered under EPCA.

a. Use of the Words ''Energy Efficient''

Washington State asserts that ''energy efficient'' is the official NEMA term for motors that meet the requirements of paragraph MG1–12.59 and Table 12–10 in NEMA Standards Publication MG1, ''Motors and Generators.'' While that table currently is identical to section 342(b)(1) of EPCA, it encompasses more motors than the electric motors covered under EPCA. Consequently, use of the term ''energy efficient'' should be avoided. (WSU/WSD, No. 5 at II.J.). NEMA recommends that the words ''energy efficient'' not be used, even as an option, since the nominal full load efficiency values, and their associated minimum efficiency values, in MG1–1993 are subject to change and, subsequently, could become inconsistent with the EPCA efficiency levels for electric motors. (NEMA, No. 18 at 9.).

EPCA requires an electric motor to meet a specified level of nominal efficiency, and does not require an electric motor to be labeled with a minimum efficiency value. Under the NEMA convention, a motor that is labeled as ''energy efficient'' must meet both a specified nominal efficiency and a minimum efficiency associated with that nominal efficiency. In view of the comments from both Washington State and NEMA, the Department understands that confusion could arise from allowing the term ''energy

[11] See § 431.82(a)(3).

efficient'' being used to connote compliance with EPCA. Consequently, the Department withdraws its proposed use of the term ''energy efficient'' in section 431.82(a)(3) and (b)(2) of today's final rule.

b. Use of Standardized Nominal Full Load Efficiency Values

As explained in section II.A.7. above, NEMA MG1 establishes a logical series of standard nominal motor efficiencies, from which the motor nameplate efficiency marking is selected, to avoid the inference of unrealistic accuracy in manufacturing and testing that might be assumed from a potentially infinite number of labeled efficiency values. One commenter queried whether only the statutory nominal full load efficiency values would be allowed on the electric motor nameplate, or some intermediate level of actual efficiency, as determined by testing that particular motor. (Treffinger, No. 4 at 4.).

Although the efficiencies stated on the labels would be standardized values, and often would not match precisely the test procedure results for the type of motor being labeled, the intervals between standardized values are small, and differences among efficiency values within a given interval are not significant. The Department believes that such standardized values accurately represent both the energy efficiency of a given motor, and the differences in efficiency among motors. Consequently, the Department is adopting in today's final rule the proposed requirement that motors be labeled with nominal full load efficiency values which are identical to the standardized values contained in NEMA MG1–1993, Table 12–8.

c. Minimum Efficiency

In the preamble to the proposed rule, at section III.E.2., *Information on Motor Nameplate,* the Department considered the requirement to display both the nominal and applicable minimum efficiency on the nameplate of an electric motor. For the reasons given, the Department stated its belief that it could not *require* the minimum efficiency to be displayed on labels or in marketing material. See 61 FR 60452 and 53 (November 27, 1996).

Underwriters Laboratories, Inc., the joint comments of WSU/WSD, and NEMA recommend against labeling electric motors with a minimum efficiency value. WSU/WSD assert that the term ''minimum efficiency'' is confusing and has ''little basis in reality.'' They assert that, even though there is popular belief that the minimum efficiency is a ''guaranteed'' minimum, their review of actual motor efficiency from motor testing laboratories shows that many individual motors fall both below the statutory nominal efficiency and the voluntary minimum efficiency associated with a particular nominal efficiency. Washington State believes that rigorous verification of compliance with the nominal efficiency will reduce occurrences of electric motor efficiency falling below the minimum. (UL, No. 9 at page 2; WSU/WSD, No. 5 at II.G; and NEMA, Public Hearing, Tr., pg. 180).

Having given this issue further consideration, the Department now believes it may have the authority under section 344(c)(2) of EPCA to require display of minimum efficiency levels on labels or in marketing materials. Nevertheless, in light of the comments, the Department will not adopt such a requirement in today's final rule.

d. Display of Nominal Efficiency, Compliance Certification Number, ''ee'' Logo, and Date of Compliance

Section 431.82(a)(1) of the proposed rule requires that the permanent nameplate of an electric motor be marked with the motor's nominal full load efficiency and the Compliance Certification number supplied by DOE. Also, proposed section 431.82(a)(3) provides for optional display of the encircled lower case letters ''ee,'' or comparable logo, if the motor both meets the applicable standard and is covered by a Compliance Certification.

Several commenters support the use of the Compliance Certification number and the ''ee'' logo. (Treffinger, No. 4 at paragraph 6; WSU/WSD, No. 5 at II.J; UL, No. 9, at page 2; ACEEE, Public Hearing, Tr. Pg. 204; and NEMA, No. 18 at pages 9 and 10; and NEMA, Public Hearing, Tr., pg. 180). UL opines that use of the ''ee'' mark would be a simple means to identify a motor that is in compliance, but cautions that DOE would have difficulty controlling its fraudulent use. (UL, No. 9, at page 2).

The Department also received comments concerning the location of the Compliance Certification number, and the additional requirement of a date or other information on the nameplate. ACEEE supports display of a CC number, date of compliance, and ''ee'' logo on the nameplate of each complying motor, but asserts that information beyond that would not contribute to enforcement. (ACEEE, Public Hearing, Tr. pg. 204.). In testimony, NEMA asserted that the motor nameplate should contain the nominal efficiency and Compliance Certification number, and that display of a standardized DOE logo be optional. (NEMA, Public Hearing, Tr. pg. 180). In its written comments, however, NEMA asserts that the location of the Compliance Certification number should be optional to the manufacturer. (NEMA, No. 18 at page 11).

Section 431.82(a)(1)(ii) and (2) of the proposed rule requires the Compliance Certification number to be marked on the permanent nameplate of an electric motor. The Department believes that marking the Compliance Certification number on the permanent nameplate of a covered motor is necessary to help enforce the efficiency standards established for electric motors under section 342 of EPCA, since the permanent nameplate provides the most durable, common location from which to glean standardized information concerning the identity of the manufacturer of that motor, construction data, operational data, energy efficiency data, and other data. Also, the Department understands that most electric motors are often purchased, sight unseen, through catalogs and other marketing materials, and the permanent nameplate is often not a factor in motor selection. The information marked on the permanent nameplate would provide some assurance to a purchaser that it had received a motor that has been certified as complying with EPCA, and provide traceability that would assist agencies that enforce the energy efficiency standards for electric motors under EPCA.

The Department believes that the proposed rule provides for the markings necessary to facilitate enforcement, in accordance with section 344(d)(3) of EPCA, and sees little value in requiring the date of compliance on the nameplate of each complying motor, as ACEEE recommends. This view is supported by NEMA's assertion that disclosing the date of compliance on shipping documents would serve no useful purpose. (NEMA, No. 18 at page 10).

For the above reasons, the Department will not require the date of compliance to be marked on the nameplate of a complying electric motor, and the provisions proposed at section 431.82(a) for marking an electric motor with the nominal full load efficiency, the Compliance Certification number, and the encircled letters ''ee'' will remain largely unchanged in today's final rule. (Discussion below at section II.F.4. further addresses use of the Compliance Certification number on motor labels.)

e. Labeling of Motors Not Covered by EPCA

Section 431.82(d), ''Other motors,'' of the proposed rule permits a ''non-

covered'' motor, including a motor manufactured prior to the effective date of EPCA for electric motors, to be labeled with the information required or permitted for electric motors, and provides that the ''non-covered'' motor will then become subject to the requirements of 10 CFR Part 431 concerning standards, testing, certification and enforcement.

Mr. W. Treffinger supports retroactive use of the encircled ''ee'' marking for units currently in stock.[12] (Treffinger, No. 4 at paragraph 6.). Both NEMA and ACEEE support use of the encircled ''ee'' logo for motors that meet EPCA efficiency standards, even if such motors are manufactured before the effective date of the standards, or are definite or special purpose motors. (NEMA, Public Meeting, June 2, 1995, Tr. pgs. 195–6; NEMA, No. 9 at pg. 13 and appendix C, pgs. 11–12; NEMA, No. 9 at C.; NEMA, No. 38 at pg. 15; and ACEEE, Public Meeting, June 2, 1995, Tr. pg. 201.) Washington State asserts that any ''non-covered'' motor model, having an enclosure and speed equivalent to a covered motor, which bears the ''ee'' mark should be subject to the same testing requirements as covered motors. (WSU/WSD, No. 5 at II.J.). NEMA expresses concern, however, that under proposed section 431.82(d), any motor for which nominal efficiency is marked on the nameplate would be classified as an ''electric motor,'' and that many types of non-covered motors are marked with the applicable nominal efficiency value. NEMA asserts that classifying a non-covered motor as an ''electric motor,'' however, should be at the option of the manufacturer, and should only occur when the manufacturer uses the Compliance Certification number and ''ee'' logo. (NEMA, No. 18 at pg. 10, and No. 38 at pg. 15).

In section III.E.4., ''Other Matters,'' in the preamble to the proposed rule, 61 FR 60454 (November 27, 1996), the Department states that there is merit in the proposal to permit manufacturers to use the encircled ''ee'' logo for motors that meet EPCA efficiency standards, even if such motors are manufactured before the effective date, or are definite or special purpose motors. However, after further review, the Department has decided to exclude proposed section 431.82(d) from the final rule. First, monitoring whether ''non-covered'' motors meet requirements imposed by and under EPCA could impose considerable burdens on DOE. The Department would have to process any Compliance Certifications submitted for such motors, and address any complaints of mislabeling and of non-compliance with efficiency standards and test procedures. This could detract from the Department's activities as to motors and other products that are clearly covered by EPCA. The Department does not believe that such use of its resources, even if legally permitted, is justified at this time. Second, the Department believes it would be problematic, under the statutory provisions for enforcement at sections 332, 333, and 345 of EPCA as to whether DOE could take enforcement action and impose sanctions as to a motor that is not covered under EPCA. Consequently, today's final rule will not include the provisions proposed at section 431.82(d) for motors that are not covered under EPCA, thereby rendering moot the aforementioned comments.

Notwithstanding today's final rule, the Department understands that the Federal Trade Commission would have jurisdiction, under section 5(a)(1) of the Federal Trade Commission Act, 15 U.S.C. 45(a)(1), for example, to address efficiency mislabeling of motors not covered by EPCA. The Department also understands that motors not covered under the statutory definition of ''electric motor'' are typically tested for energy efficiency, in the same manner as covered electric motors, under IEEE Standard 112–1996 Test Method B or CSA Standard C390–93 Test Method (1), and such motors that are not covered could be generically represented as ''energy efficient'' according to the voluntary labeling provisions in NEMA MG1–1993, apart from the provisions of EPCA.

f. Enforcement Testing Where Violation of a Labeling Representation is Alleged

The proposed rule could be interpreted as providing that the enforcement procedures, set forth in section 431.27 of the proposed rule, would be used only to address allegations of non-compliance with the applicable regulatory standard for efficiency. In the reopening notice, at Section II.D., *Enforcement Testing Where Violation of a Labeling Representation Is Alleged,* 63 FR 34765–66 (June 25, 1998), DOE stated its intention to make clear in the final rule that the enforcement procedures would also apply in determining whether the labeled efficiency rating for a motor is erroneous, and the reopening notice sought comments on this issue.

The ACEEE and NEMA support use of the enforcement procedures for determining both the accuracy of the nameplate efficiency, as well as compliance with the applicable EPCA efficiency value. (NEMA/ACEEE, No. 38 at D.) There were no comments to the contrary. The final rule provides that these procedures, including the proposed sampling plan at section 431.127(c), will be used to determine the validity of labeling representations for an electric motor, and not just whether the motor meets or exceeds the regulatory standard for efficiency. The Department has made necessary modifications in the language of section 431.127(a)(1) and appendix B to subpart G, and has modified section 431.127(c), Sampling, to read, ''The determination that a manufacturer's basic model complies with the applicable energy efficiency standard, or with its labeled efficiency, must be based on testing conducted in accordance with the statistical sampling procedures set forth in appendix B of this subpart and the test procedures set forth in Appendix A to subpart B of this part.''

g. Imported Motors

Section 431.82(c) of the proposed rule would require any electric motor imported into the United States to be accompanied by shipping papers that disclose clearly the date of the Compliance Certification for that motor, and the applicable Compliance Certification number.

NEMA asserts that shipping documents should show the Compliance Certification number(s) for the electric motor(s) covered under EPCA, for example, ''EPACT CC No. XXX IMPORTED FOR SALE IN USA.'' NEMA objects to disclosing the date of the Compliance Certification and energy efficiency of the motor or motors on import documents. NEMA also asserts that shipping documents should list motors that are not covered by EPCA with the reason they are not covered, for example, ''DEF. PURPOSE MOTOR EXEMPT FROM EPACT IMPORTED FOR SALE IN USA.'' (NEMA, No. 18 at pages 9 and 10, and exhibits B, C, and D).

Proposed section 431.82(c), was intended to aid the U.S. Customs Service in preventing entry into the United States of motors that do not comply with EPCA. In discussions with the Department, however, the Customs Service has raised questions as to whether the provisions of proposed section 431.82(c) would help them. Consequently, the Department had decided to delay final action on this section until it has had further consultations with Customs. The Department intends to include in those

[12] The Department infers that ''units currently in stock'' refers to motors manufactured prior to the effective date of EPCA, and that would be covered equipment if they had been manufactured after such effective date.

discussions the subject of requirements for imported motors not covered by EPCA. Therefore, today's final rule includes no provisions concerning import documents.

h. Weights of Conductors and Magnetic Materials

One commenter proposed that the motor nameplate list the weight of the copper or aluminum conductors used in the motor, and the weight of the magnetic iron used in the construction of the motor. (Angelo Ruggiero, No. 17.).

The Department understands that a relationship exists between the efficiency of an electric motor and the quantity and quality of active materials, such as copper and magnetic steel, used in the motor. In the Department's view, marking the measured weight of copper, aluminum, or magnetic steel content for a particular basic model electric motor might provide some indication of motor efficiency, but it would be of limited value because it is only one of several variables affecting efficiency that could also be marked on the nameplate of a motor. On the other hand, marking of all of these values on the nameplate would be very burdensome and might not be technically feasible. Therefore, the Department does not believe that it should require such markings under section 344 of EPCA and the final rule contains no such requirement.

F. Certification of Compliance

EPCA directs the Department to require manufacturers to certify that each motor meets the applicable EPCA efficiency standard. EPCA section 345(c). 42 U.S.C. 6316(c). Section 431.123 of the proposed rule establishes the requirements for manufacturers to certify compliance, including a reference to Appendix A of subpart G, which sets forth the format for a Compliance Certification. 61 FR 60371, 60473–60474 (November 27, 1996).

The first sentence of proposed Section 431.123(a) states that no electric motor ''subject to an energy efficiency standard set forth in subpart C of this part'' may be distributed unless it is covered by a Compliance Certification. Thus, because proposed section 431.42 in subpart C provides that only electric motors manufactured after October 24, 1997 (or October 24, 1999 for certain motors) are subject to standards, the proposed rule as written would require a Compliance Certification to be submitted only for an electric motor manufactured after whichever of the two dates applies to that motor. 61 FR 60469–70 (November 27, 1996). For the same reason, proposed section 431.123(a) would not bar the distribution of a non-complying motor manufactured before the applicable date. Consequently, the Department has not added to proposed section 431.123(a) the language ''manufactured after October 24, 1997'' to qualify the term ''electric motor,'' as suggested by NEMA (NEMA, No. 18, p. 12), because to do so would create a redundancy.

The following addresses issues concerning the content and format of the Compliance Certification, and concerning issuance and use of Compliance Certification numbers.

1. Reference to Certification Programs

The Compliance Certification form in Appendix A of subpart G in the proposed rule includes tables for reporting the efficiencies of electric motors. A ''Note'' to the tables, 61 FR 60474 (November 27, 1996), directs manufacturers to ''place an asterisk beside each reported nominal full load efficiency that is determined by actual testing rather than by application of an alternative efficiency determination method.'' Reliance Electric encourages the Department to modify the Compliance Certification in appendix A of subpart G to also include identification of motors for which a certification organization was used. (Reliance, No. 11, pp. 6–7; Reliance No. 47).

Whether a manufacturer uses its own accredited laboratory, a third party accredited laboratory or a certification program, the manufacturer bears ultimate responsibility for certifying compliance under 431.123 of the rule. The Department believes that there is no need to specify that a certification program is contributing to the determination, since the manufacturer is listed on the Compliance Certification. Consequently, in today's final rule the Department will not require the Compliance Certification to identify motors for which a certification organization was used.

2. Nominal Versus Average Full Load Efficiency

Each efficiency standard prescribed by EPCA for an electric motor is a specified minimum ''nominal full load efficiency.'' EPCA section 342(b)(1), 42 U.S.C. 6313(b)(1). The preamble to the proposed rule, in section III.E.2., ''Information on Motor Nameplate,'' discusses nominal full load efficiency as the efficiency that industry currently marks on the motor nameplate, and that the Department will require be on the nameplate. ''Nominal full load efficiency'' is defined in the rule at section 431.2 as being derived from the ''average full load efficiency'' of a population of motors of the same design. Pursuant to sections 431.2 and 431.24 of the proposed and final rules, ''average full load efficiency'' refers to the average of the individual efficiencies of such a population of motors, determined through testing or use of an AEDM. Section 431.123(b)(2)(i) of the proposed rule requires that the Compliance Certification report the average full load efficiency of an electric motor, as is designated on the sample Compliance Certification in appendix A to subpart G of part 431.

Reliance Electric encourages the Department to modify this requirement, so that the efficiency value to be reported is the declared ''nominal full load efficiency'' and not the ''average full load efficiency.'' Reliance states this would be consistent with both the instructions in the Note on the Compliance Certification, and the efficiency which is marked on the motor, rather ''than a value of efficiency not found in any publication, database, or on the motor itself.'' (Reliance, No. 11 at pg. 7)

The Department recognizes that ''nominal full load efficiency'' is used in EPCA, and has been in use by industry, to represent the energy efficiency of a motor. Moreover, as indicated in Section II.A.7. above, the definition of ''nominal full load efficiency'' in today's final rule is based on the Department's acceptance of the view that the measured average full load efficiency of a motor could sometimes overstate the motor's efficiency, and could contain fractional values that would suggest an unrealistic degree of precision in determining efficiency. The Department also believes at this point that its receipt of average full load efficiency figures in Compliance Certifications would not significantly aid in achieving compliance with EPCA. For all of these reasons, today's final rule requires nominal full load efficiency to be reported under section 431.123(b)(2)(i), and on the sample Compliance Certification in appendix A to subpart G of the final rule.

3. Other Information To Be Reported

As indicated above, the proposed Appendix A to Subpart G provides for reporting the efficiencies of electric motors. Specifically, pursuant to proposed section 431.123(b)(2)(i), Appendix A's ''Attachment to Compliance Certification'' (''Attachment'') contains two tables (one for motors rated in horsepower and the other for motors rated in kilowatts) for reporting the efficiency of the least efficient basic model within each category for which EPCA prescribes a

minimum efficiency. The purpose of these tables is to enable a manufacturer or private labeler support its certification of compliance, by reporting motor efficiencies which show that the least efficient basic model in each category is at or above the EPCA standard for that category.

As also described above, the Note to the Attachment directs that an asterisk identify each reported efficiency that is determined through testing rather than use of an AEDM. The Note also directs listing of other basic models that have been tested, and the Attachment contains a table for providing such a list. 61 FR 60474. These provisions were intended to implement section 431.123(b)(2)(ii), which requires that the Compliance Certification identify all basic models that have been tested pursuant to section 431.24. (Such testing occurs either (1) to determine a basic model's efficiency for purposes of certifying its compliance to DOE and of labeling or (2) to substantiate an AEDM.) Identification of these basic models would indicate whether five or more basic models were tested, as is generally required by section 431.24. The Attachment is not intended to require a manufacturer to report to DOE efficiency tests it performs for other purposes, such as quality control.

Reliance suggests certain changes in the tables of the Attachment. (Reliance No. 47) First, it recommends that the two tables for reporting motor efficiencies be combined into one, with the title of the first column to be ''Motor horsepower/kilowatts.'' The Department believes that combining the two tables would simplify the format of the attachment, reduce in some instances the amount of information that would have to be reported, and still provide the necessary information for certifying compliance. Consequently, the Attachment in the final rule combines these two tables as recommended by Reliance. Second, in the table for listing other basic models that have been tested, the heading of the fourth column refers to the ''least efficient basic model.'' Reliance points out that this seems to call for reporting on the same basic models that would be included in the aforementioned table for reporting efficiencies, and would not provide for identification of more efficient basic models that had been tested to substantiate an AEDM. On this point as well, the Department agrees with Reliance's comments. The Department erroneously included the term ''least efficient'' in this table, and its retention would prevent the table from serving its intended purpose of assuring that the Compliance Certification identifies all testing undertaken to comply with the DOE regulation. Accordingly, the term is deleted from the heading of the fourth column. Finally, in today's final rule the Department has changed the title of this table to ''Models Actually Tested and Not Previously Identified'', as suggested by Reliance. Reliance points out that the title in the proposed rule, ''Additional Motors Actually Tested'', erroneously assumes that the table for reporting motor efficiencies will identify at least one basic model that has been tested.

4. Compliance Certification Number

Section 431.123(e), *Response to Certification; Certification Number for Electric Motor*, in the proposed rule, requires DOE to provide an identification number to each manufacturer or private labeler to signify compliance with section 431.123, *Compliance Certification*. Section 431.82(a)(1)(ii), *Electric motor nameplate*, in turn, requires the manufacturer to display the Compliance Certification number (''CC number'') on the permanent nameplate of the electric motor. (As written, the proposed rule does not allow for a ''private labeler's'' Compliance Certification number to be marked on the nameplate.) The Department believes that such a number is necessary to help enforce the efficiency standards, under section 344(d) of EPCA, because it would provide traceability directly to the manufacturer or private labeler, and would discourage distribution of non-complying motors.

NEMA and ACEEE recommend that one number be assigned to each manufacturer, unless the manufacturer requests additional numbers. (NEMA, No. 18 at page 11; and NEMA/ACEEE, No. 38 at pages 16 and 17). Also, NEMA recommends that each manufacturer marketing an electric motor under its own name receive its own CC number, and that a private labeler should have the option to receive its own number, or arrange to use a manufacturer's number. (Public Hearing, Tr., pg. 180).

Leeson Electric asserts that a CC number on the nameplate should identify the party responsible for the energy efficiency of that motor. Leeson conjectures, for example, that it could design and test a motor for efficiency, and through contractual arrangements have another manufacturer produce that motor complete with a Leeson nameplate and traceable to Leeson. Alternatively and with proper arrangements, Leeson conjectures that it could manufacture a motor using someone else's design and number. In either case, the CC number should identify a party responsible for the motor's efficiency. (Leeson, Public Hearing, Tr., pgs. 191–92). GE Motors recommends that the name on the nameplate be consistent with the Compliance Certification number. (GE, Public Hearing, Tr. pg. 192–93).

The Department understands that a motor manufacturer could manufacture a motor for sale (1) under its own name, (2) by another motor manufacturer, (3) by a private labeler, or (4) by any combination of these three means. For reasons of contractual obligation or product differentiation, a motor manufacturer might not want to indicate on a motor nameplate or in marketing materials that, for example, its Motor A and competitor's Motor A are both made by the competitor. Similarly, a company owning a private label might not want to disclose the identity of the motor manufacturer on its motor nameplate or in marketing materials for economic or marketing reasons, such as using a variety of manufacturers to supply the same type motor, or maintaining the focus of recognition on its private label to the exclusion of identifying the source of the motor. On the other hand, because of contractual or other considerations, a private labeler or a manufacturer selling a motor made by another manufacturer, might wish to include on the motor's nameplate the CC number of the firm that manufactured the motor.

The Department is persuaded that the final rule should allow a private labeler, or a manufacturer distributing a motor it did not manufacture, to mark a motor with its own CC number or the number of the motor's manufacturer. Use of the CC number is intended to discourage distribution of non-complying motors, to provide a marking to identify a motor that has been certified to be in compliance with 10 CFR Part 431 and to identify the source of the Compliance Certification, not necessarily to identify the manufacturer to the consumer.

The proposed rule would already permit (1) a private labeler to mark a motor's nameplate with the manufacturer's CC number, and (2) a manufacturer distributing a motor it had not manufactured to use either its own CC number or the number of the manufacturer. The final rule provides likewise. In light of the foregoing discussion, however, proposed section 431.82(a)(1)(ii) is revised in the final rule to permit a private labeler to use its own CC number. DOE does not believe that any purpose would be served by requiring the CC number on a motor to be the number provided to the party named on the motor nameplate, as apparently recommended by GE Motors.

As to the issuance of more than one CC number to a manufacturer (or private labeler), in the Department's view this would be warranted only in limited circumstances. Although the commenters that made this proposal gave no reasons for it, it appears that a manufacturer or private labeler that distributes motors under different brand names, trademarks or labels, might wish to obtain more than one number to preserve the separate identities of these motors. The Department believes that, in such a situation, a manufacturer or private labeler should be permitted to obtain a CC number that would apply to motors it distributes under a name that does not overlap with other names under which it sells motors. Issuance of more than one CC number under other circumstances, however, would be unnecessarily burdensome to the Department, and could conflict with the use of the CC number as a means of discouraging distribution of non-complying motors and readily identifying the source of the Compliance Certification. Thus, for example, if Company XYZ, a motor manufacturer or private labeler, sells electric motors under the ''XYZ'' brand name or label, and also under the ''ABC'' brand name or label, it should be permitted to obtain one CC number for each of these labels or brand names. But it should not be permitted, for example, to obtain one CC number for motors sold under the ''XYZ Premium'' or ''XYZ'' label, and another for motors sold under the ''XYZ Standard'' or ''XYZ/ABC'' label. Accordingly, section 431.123(c) and provisions in section 431.123(f) have been added to the final rule to allow a manufacturer or private labeler to request and obtain a separate CC number for any unique name under which it distributes electric motors.

Underwriters Laboratories contends that a database of information related to the Compliance Certification number will be needed for use by enforcement agencies, such as the U.S. Customs Service. Otherwise, motors could be labeled as being in compliance even though they have not been certified under section 431.123 and appendix A to subpart G. (UL, No. 9 at page 2.). The Department is likewise concerned about keeping records of Compliance Certification that would facilitate enforcement. As with compliance statements and certification reports filed with the Department of Energy under 10 CFR 430.62, *Submission of data*, for residential appliances, the Department intends to maintain such files for electric motors. These will be available to the U.S. Customs Service and any other enforcement agencies.

G. Other Matters

1. Standards Incorporated by Reference

Section 340(13)(A) of EPCA, which defines the term ''electric motor,'' states that the terms in that definition shall be used ''as defined in NEMA Standards Publication MG1–1987.'' Under section 340(13)(H) of EPCA, ''nominal full load efficiency'' is an average efficiency ''as determined in accordance with'' NEMA MG1–1987. Section 343(a)(5) of the Act requires that testing procedures for motor efficiency shall be the test procedures specified in NEMA Standards Publication MG1–1987, unless those are amended.

First, consistent with the EPCA directive that the definition of ''electric motor'' be based on NEMA MG1, section 431.2 of the proposed rule states, for the most part, that the terms used to define ''electric motor'' shall be construed with reference to provisions in the NEMA Standards Publication MG1–1987. 61 FR 60466 (November 27, 1996). In addition, section 431.2 of the proposed rule defines the term ''general purpose''—one element in the EPCA definition of ''electric motor''—by reference to the service conditions specified in NEMA MG1 paragraph 14.02, ''Usual Service Conditions.''

Second, consistent with section 340(13)(H) of EPCA, the proposed rule defines ''nominal full load efficiency'' with reference to Table 12–8 of NEMA MG1–1993.

Third, consistent with the EPCA directive that the test procedures be those specified in NEMA MG1, section 431.22(a)(2)(i) of the proposed rule, *Reference sources*, incorporates by reference NEMA MG1 with Revision 1, paragraph 12.58.1, ''Determination of Motor Efficiency Losses'', and Table 12–8, ''Efficiency Levels.'' 61 FR 60466 (November 27, 1996).

Among the comments received concerning the proposed rule were requests from NEMA and ACEEE that the Department make reference to the complete NEMA MG1, including updates through Revision 4 (June 1997), since they provide the details necessary to understand other requirements of the definition of electric motor, such as Design A and B characteristics. (NEMA, No. 18 at pg. 5; and NEMA/ACEEE, No. 38 at pg. 14.)

The Department believes it is inappropriate and impractical to incorporate into the final rule the entirety of NEMA MG1. Many parts of MG1 concern motors that are not covered by EPCA. Other parts of MG1, although relevant to motors that are covered, are irrelevant to issues of motor efficiency, or do not concern any of the matters, discussed above, on which EPCA directs that MG1 be followed. Rather they concern subjects such as aspects of the construction and performance of motors that do not bear upon the definition of ''electric motor,'' the test procedures for measuring efficiency, or determination of nominal efficiency. Thus, to incorporate all of MG1 into the final rule would result in the rule's containing a considerable amount of material that is irrelevant to compliance with EPCA. Moreover, MG1 is a sizable volume. If it were incorporated into the final rule, a substantial amount of material would become part of the rule, and the Department would have to have complete copies of this material available for inspection both at the Federal Register and the Department. For all of these reasons, the final rule does not incorporate by reference the entirety of MG1.

The final rule, however, particularly in the definition of ''electric motor,'' refers to MG1 more extensively and with greater specificity than does the proposed rule. Moreover, the final rule incorporates by reference all of the MG1 provisions referred to in the rule. As indicated above, the proposed rule states only that terms in the ''electric motor'' definition that are not defined in the rule or with reference to IEC standards, ''shall be construed with reference to * * * MG1–1987.'' 61 FR 60466 (November 27, 1996). The final rule specifically identifies each such term that is defined in MG1, cites the provision or provisions of MG1 containing the definition, and states that the term must be construed with reference to the cited provision or provisions.

All of these references are to provisions of MG1–1993 with Revisions 1–4. Several of the referenced provisions (e.g., paragraphs 1.16.1, 4.01 and 12.40.1) contain differences in numbering, language, or format, but not substance, from the corresponding provisions of MG1–1987. Referencing these MG1–1993 paragraphs in the final rule raises no issue as to the rule's conformity with EPCA's requirement that terms in the definition of electric motor be used ''as defined in MG1–1987.'' The final rule's references to paragraphs 11.31, 11.34 and 11.36 of MG1–1993, however, to construe the term ''NEMA T-frame dimensions,'' specifically exclude the dimension values in those paragraphs for motors with frame sizes 447 and 449. These values were not included in MG1–1987

and these motors were not considered to be NEMA T-frame motors under MG1–1987.

In an additional departure from MG1–1987, paragraph 11.31 of MG1–1993 does not contain values for the ''Bmax'' dimension—the maximum sizes for the ''B'' dimension. Consequently, MG1–1993 appears to define ''T-frame'' more broadly than it was defined in MG–1987, and to increase the number of motors that meet the T-frame classification. The Department understands, however, that even while operating under MG1–1987, the industry widely ignored the Bmax dimension, considered motors with B dimensions in excess of Bmax to be T-frame, and did not view Bmax as critical in defining what constituted a T-frame motor. Thus, MG1–1987 as applied excluded the Bmax dimension, and when the ''electric motor'' definition was added to EPCA, in 1992, ''T-frame, * * * motor * * * as defined in MG1–1987'' meant a motor with T-frame dimensions without regard to Bmax. For these reasons, the final rule references and incorporates paragraph 11.31 of MG1–1993 without altering its exclusion of the Bmax dimension.

Finally, the final rule retains the proposed rule's references to MG1–1993 in the definitions of ''general purpose'' and ''nominal full load efficiency'', and adds references to MG1–1993's description of ''unusual service conditions'' in the definitions of ''definition purpose motor'' and ''general purpose.'' With respect to the test procedure, the final rule also retains the proposed rule's references to MG1–1993 but adds references to Revisions 1–4.

2. Enforcement: Determining What Constitutes a ''Separate Violation''

Sections 332, 333(a) and 345(a) of EPCA, 42 U.S.C. 6302, 6303(a) and 6316(a) set forth actions that violate EPCA requirements for electric motors, and the penalties associated with each violation. Section 431.122, *Prohibited acts,* in the proposed rule incorporates and implements these provisions. It provides in paragraph (b) that, *for each motor* a manufacturer distributes that does not comply with applicable efficiency standard, a separate violation occurs. NEMA questions whether the Department intends ''that the *total penalty* for distribution of a non-compliant motor be limited to $100,'' and recommends that distribution of a motor that does not comply with the applicable efficiency standard be a separate violation for *each day* of noncompliance. (NEMA, No. 18 at pgs. 10–11; emphasis added.)

The Department believes that NEMA has misconstrued the proposed rule. Proposed section 431.122(b) provides, and DOE intends, that distribution of ''each unit'' of an electric motor that fails to comply with the applicable EPCA efficiency standard would be a separate violation. Thus, for example, if a manufacturer were to distribute 1,000 motors that do not meet the applicable standard, that would constitute 1,000 violations, and the total penalty would be $100,000 ($100 times 1,000).

In this and other respects, proposed section 431.122 closely adheres to the EPCA provisions that delineate violations of efficiency requirements, and penalties for such violations. In particular, sections 332(a), 333(a), and 345(a) of EPCA provide that a separate violation occurs, (1) for ''each violation'' of the prohibition against distributing any new covered equipment that does not conform to an applicable EPCA standard, and (2) for ''each day'' a manufacturer fails to provide required information, or comply with certain requirements of section 326 of EPCA. Those sections do not provide that each day of noncompliance with an applicable standard is a violation, as NEMA recommends. It is questionable, therefore, whether the Department could adopt such a provision in today's regulations. Nor is such a provision in 10 CFR section 430.61, which implements these same sections of EPCA for consumer products. The Department sees no basis at this time for taking a different approach in Part 431.

Accordingly, today's rule does not incorporate NEMA's suggestion that each day of noncompliance with an applicable standard would be a separate violation.

3. Technical Corrections

Today's final rule makes a number of changes to the proposed rule that do not alter the substance or intended effect of the rule. These changes, for example, expand or correct references, conform language in the rule to statutory language, or clarify the language of the rule. They are as follows:

a. References to International Standards

The definition of ''electric motor'' at section 431.2 of the proposed rule states that four terms in the definition shall be construed with reference to IEC Standard 34–1. 61 FR 60465–66 (November 27, 1996). The Department has determined that three of these terms—''cage,'' ''IEC metric equivalents [to T-frame dimensions]'' and ''Design N''—must instead be construed with reference to certain provisions in three IEC standards other than Standard 34–1. (The fourth term is construed with reference to certain provisions of Standard 34–1.) The final rule revises the definition of ''electric motor'' to reference the current versions of these provisions. In addition, because they must be used to construe the terms used in the definition, section 431.22 of the final rule incorporates these provisions by reference. The Department has also added a definitions of ''ISO''—''International Organization for Standardization''—to section 431.2 of the final rule, because of the many references to ISO in the rule.

b. Use of Term ''Energy Conservation Standard''

Part C of EPCA, which governs this final rule, uses the term ''energy conservation standard'' to refer to a level of energy efficiency required under Part C. See EPCA section 340, 42 U.S.C. 6311. In the final rule, therefore, that term is used in place of the term ''energy efficiency standard'', as for example in sections 431.41 and 431.42.

c. Preemption of State Regulations

Section 431.43 of today's final rule concerns preemption of state energy efficiency requirements for electric motors. It contains, with minor technical modifications, the language of 10 CFR section 430.33, which concerns preemption of state efficiency requirements for products covered by Part 430. Similarly, section 431.83 of today's final rule concerns preemption of state efficiency labeling requirements for electric motors. It contains, with minor technical modifications, the language of 16 CFR section 305.17, a Federal Trade Commission regulation that concerns preemption of state labeling requirements for products covered by Part 430. Neither section 431.33 nor section 431.83 was in the proposed rule, but each merely incorporates pre-emption requirements specified by sections 327 and 345 of EPCA and neither changes the substance, force or effect of the provisions of the proposed rule.

d. Provisions Incorporated from Part 430

Sections 431.28, 431.61, 431.125, 431.126, 431.128, 431.129, 431.130, 431.131, and 431.132 of the proposed rule incorporate sections of 10 CFR Part 430. These proposed sections do not repeat the language of the Part 430 provisions, but merely specify the changes that must be made in that language when it is used in Part 431. NEMA requests that the language of these sections be printed in full in Part 431, so that Part 431 will be self-contained, and its users will not have to

consult Part 430 to find pertinent requirements. (NEMA, No. 18 at pg. 13). Today's final rule accepts NEMA's suggestion, and contains the language of each of these sections in full. This results in no substantive change from the proposed rule.

e. Amount of Penalty

Section 345(a) of EPCA, 42 U.S.C. 6316(a), applies the civil monetary penalty provisions of Section 333(a) of EPCA, 42 U.S.C. 6303(a), to electric motors. Section 333(a) provides for a maximum civil penalty of $100 for each violation of an EPCA requirement. As proposed, section 431.122(b) incorporated the provisions of section 333(a), including the $100 penalty. Subsequent to issuance of the proposed rule, the Department adjusted civil monetary penalties under its jurisdiction, as required by the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. 2461 note, as amended by the Debt Collection Improvement Act of 1996 (Pub. L. 104–134). 62 FR 46181 (September 2, 1997). The Department increased to $110 the penalty amount specified by section 333(a). This increase was reflected in an amendment to 10 CFR section 430.61. 62 FR 46181, 46183 (September 2, 1997). Accordingly, DOE has adjusted the penalty amount in section 431.122(b) of the final rule to incorporate the $110 penalty, to reflect the increase in all civil penalties set by EPCA.

f. Prohibited Acts—Section 431.122

Proposed section 431.122(a)(4) provides that it would be a prohibited act under EPCA to advertise in a catalog from which an electric motor can be purchased without including in the catalog the information ''required by section 431.82(b)(2).'' This section reference is erroneous. It is section 431.82(b)(1), rather than Section 431.82(b)(2), that requires inclusion of certain information in catalogs. Therefore, in the final rule, the section cited in section 431.122(a)(4) is corrected to 431.82(b)(1).

The final rule also adds to paragraph (c) of section 431.122 the definition of ''knowingly'' that is contained in section 333(b) of EPCA.

g. Language Changes in Sections 431.23 and 431.124(a)

As proposed, section 431.23 could give the impression that the test procedures prescribed in the regulation are mandatory only for determining whether a motor satisfies the applicable energy conservation standard. However, as demonstrated by EPCA provisions such as sections 343(d)(1) and 344(b), 42 U.S.C. 6214((d)(1) and 6215(b), and as recognized in other provisions of the final rule such as sections 431.24 and 431.82(a), the test procedures in the final rule must be used to measure an electric motor's efficiency for all purposes under EPCA. Section 431.23 of the final rule has been revised to make this clear.

Language has been added to section 431.124, *Maintenance of records,* to make clear that a manufacturer must keep records of any written certification it receives from a certification organization and relies upon under the Part 431. The manufacturer's record-keeping obligation is not be limited to certifications that attest to a motor's compliance with the applicable standard, as suggested by the proposed rule. A manufacturer also must keep, for example, certifications in which a certification organization attests to the numerical efficiency ratings of particular motors. This is consistent with the understanding of the Department and the industry that certification organizations do not merely certify a motor's compliance with a standard, but also certify its level of performance. 61 FR 60457 (November 27, 1996), section II.C.1–3 above, Reliance No. 11 at p. 7, NEMA No. 38 at p. 5.

III. Procedural Issues and Regulatory Review

A. Review Under the National Environmental Policy Act

This rule was reviewed for environmental impacts and the Department concluded that neither an environmental assessment nor an environmental impact statement is required. 61 FR at 60460. There were no comments on this issue. Therefore, the Department will take no further action in today's final rule with respect to the National Environmental Policy Act.

B. Review Under Executive Order 12866, ''Regulatory Planning and Review''

This regulatory action was reviewed pursuant to Executive Order 12866, ''Regulatory Planning and Review,'' October 4, 1993. The Department concluded that this action was not subject to review under the Executive Order by the Office of Information and Regulatory Affairs. There were no comments concerning Executive Order 12866. Therefore, the Department will take no further action in today's final rule with respect to Executive Order 12866.

C. Review Under the Regulatory Flexibility Act

This rule was reviewed pursuant to the Regulatory Flexibility Act of 1980, 5 U.S.C. 601 *et seq.*, which requires the preparation of an initial regulatory flexibility analysis for every rule which by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. A regulatory flexibility analysis examines the impact of the rule on small entities and considers alternative ways of reducing negative impacts. The Department included an analysis of small entity impact in the NOPR, 61 FR 60460–61 (November 27, 1996). In summary, DOE estimates there are approximately 27 domestic firms and 14 foreign firms that manufacture electric motors covered under EPCA. Of these firms, DOE estimates there are four to six electric motor manufacturers that are small businesses under the size standards published by the Small Business Administration. The NOPR analysis examined the anticipated economic impact of the proposed rule on small manufacturers, taking into account current industry practices and steps taken in the design of the rule to keep the testing burden on manufacturers as low as possible. DOE concluded that the cost of complying with the rule (excluding the cost of compliance with the energy efficiency standards and test procedures directly imposed by EPCA) would not impose significant economic costs on a significant number of small manufacturers.

Only Sterling Electric, Inc. submitted comments concerning the possible effect of the proposed rule, and in particular its provisions pertinent to sampling plans and compliance certification, on small business. (Sterling, No. 13). Sterling Electric requested that the Department ''keep the small manufacturer in mind'' as the final rule is written and recommended (1) ''more than one choice selecting an agency to either certify and/or accredit labs,'' and (2) ''a simple statistical procedure'' to verify that its electric motors are in compliance with EPCA efficiency levels.

The Sterling comments are addressed at sections II.C.2. ''Issues involving both use of accredited laboratories and use of certification organizations,'' and II.C.4.c.(1), ''Sampling Plan for Compliance Testing,'' in the preamble to today's final rule. In sum, today's final rule at section 431.25(a) allows a manufacturer to certify compliance through its election of either an

independent testing or a certification program, and adopts the NEMA sampling plan for determining compliance, which the Department believes is a sample statistical procedure that is consistent with industry practice. Furthermore, and as pointed out in the Department's regulatory flexibility analysis, 61 FR 60461 (November 27, 1996), the compliance certification requirement would not become effective until 24 months after the effective date of the final rule. As per its analysis in the NOPR, and in view of the Department's response to the aforementioned comments from Sterling Electric, the Department certifies that today's final rule will not impose significant economic costs on a substantial number of small manufacturers.

D. Review Under Executive Order 12612, ''Federalism''

This rule was reviewed pursuant to Executive Order 12612, ''Federalism,'' 52 FR 41685 (October 30, 1987), which requires that regulations, rules, legislation, and any other policy actions be reviewed for any substantial direct effect on States, on the relationship between the National Government and States, or in the distribution of power and responsibilities among various levels of government.

The Department set forth its analysis in the NOPR, 61 FR 60461–62 (November 27, 1996), and concluded that the proposed rule would not alter the distribution of authority, nor would it regulate the States. There were no comments concerning Executive Order 12612. Therefore, the Department will take no further action in today's final rule with respect to Executive Order 12612.

E. Review Under Executive Order 12630, ''Governmental Actions and Interference With Constitutionally Protected Property Rights''

The Department determined, 61 FR 60462 (November 27, 1996), pursuant to Executive Order 12630, ''Governmental Actions and Interference with Constitutionally Protected Property Rights,'' 52 FR 8859 (March 18, 1988), that this regulation would not result in any takings which might require compensation under the Fifth Amendment to the United States Constitution.

There were no comments concerning Executive Order 12630. Therefore, the Department will take no further action in today's final rule with respect to Executive Order 12630.

F. Review Under the Paperwork Reduction Act

This rule was reviewed pursuant to the Paperwork Reduction Act of 1995, 44 U.S.C. 3501, *et seq.* The proposed rule requires collections of information necessary for implementing and monitoring compliance with the efficiency standards, testing, labeling and certification requirements for electric motors, as mandated by EPCA. The Department set forth its analysis, under the Paperwork Reduction Act, in the NOPR, 61 FR 60462 (November 27, 1996).

The recordkeeping and reporting requirements in the proposed rule, such as disclosing energy efficiency on the nameplate of a motor and in marketing materials, maintaining records that substantiate the efficiency of an electric motor for two years, and a one-time Compliance Certification that affirms that each basic model meets the applicable EPCA efficiency standard, were based on current industry practice and the views of stakeholders received at a public meeting held in May 1995, in written comments solicited in the notice of that meeting, and in subsequent informal contacts. Comments relevant to the information and recordkeeping requirements that were considered under the Paperwork Reduction Act, such as comments on labeling, disclosure of efficiency information in marketing materials, compliance certification and recordkeeping, were submitted by NEMA, Reliance Electric, Underwriters Laboratories, and the American Council for an Energy Efficient Economy, and were addressed in the NOPR, 61 FR 60451–54; 60458–59 (November 27, 1996). (NEMA, No. 9 at C., D. and D.3.; Reliance, No. 8 at 3.b.3, 3.c. and 3.d.1; UL, No. 4 at Labeling; ACEEE, No. 7 at 3.c). Subsequent comments concerning the information and recordkeeping requirements at proposed sections 431.24(b)(4)(ii), 431.82, 431.123 and appendix A to subpart G, and 431.124 in the proposed rule, were addressed above (Treffinger, No. 4; WSU/WSD, No. 5; UL, No. 9; Ruggiero, No. 17; and NEMA, No. 18). Commenters were, in general, supportive of the proposed rule.

The information collection and recordkeeping requirements in this final rule have been approved by the Office of Management and Budget (OMB) under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*) and have been assigned OMB control number 1910–5104. OMB assigns a control number for each collection of information it approves. DOE may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB number.

G. Review Under Executive Order 12988, ''Civil Justice Reform'

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, ''Civil Justice Reform,'' 61 FR 4729 (February 7, 1996), imposes on executive agencies the general duty to adhere to the following requirement: (1) eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; and (3) provide a clear legal standard for affected conduct rather than a general standard and (4) promote simplification and burden reduction.

With regard to the review required by section 3(a), section 3(b) of the Executive Order specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) Clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of the Executive Order requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE reviewed today's final rule under the standards of section 3 of the Executive Order and determined that, to the extent permitted by law, they meet the requirements of those standards.

H. Review Under Section 32 of the Federal Energy Administration Act

Pursuant to section 301 of the Department of Energy Organization Act (Pub. L. 95–91), the Department of Energy is required to comply with section 32 of the Federal Energy Administration Act of 1974 (FEAA), as amended by the Federal Energy Administration Authorization Act of 1977. 15 U.S.C. 788.

The final rule incorporates a number of commercial standards that are essentially required by the Act. For example, the procedures required for measuring the efficiency of electric motors come from the NEMA publication, ''Motors and Generators,'' MG1–1993 Revisions 1 through 4; the

Institute of Electrical and Electronics Engineers, Inc., ''Standard Test Procedure for Polyphase Induction Motors and Generators,'' IEEE Std 112–1996 Test Method B for motor efficiency; and CSA International Standard C390–93, ''Energy Efficiency Test Methods for Three-Phase Induction Motors,'' Test Method (1). By way of further example, certain definitions in the final rule are drawn from NEMA Publication MG1. Because the Department has little discretion to omit these standards from its regulation, section 32 of the FEAA has no application to them.

As part of its definition of electric motor, however, the final rule does employ the commercial International Electrotechnical Commission Standards 60034–1, 60034–12, 60050(411) and 60072–1, which the Act does not direct the Department to adopt. In addition, as proposed in the NOPR, 61 FR 60449–50, 60469–70 (November 27, 1996), the Department has incorporated into the final rule the standard kilowatt equivalents specified in IEC Standard 72–1 for the horsepower ratings that EPCA prescribes standards for.

As required by section 32(c) of the FEAA, the Department has consulted with the Attorney General and the Chairman of the Federal Trade Commission concerning the impact of these standards on competition, and neither has recommended against incorporation or use of these standards.

I. Review Under the Unfunded Mandates Reform Act

This regulatory action was reviewed pursuant to the Unfunded Mandates Reform Act of 1995 (UMRA), and the Department concluded that the requirements of sections 203 and 204 of the UMRA did not apply to today's final rule. 61 FR 60463 (November 27, 1996). There were no comments concerning the UMRA. Therefore, the Department will take no further action in today's final rule with respect to the UMRA.

J. Review Under the Small Business Regulatory Enforcement Fairness Act

Consistent with Subtitle E of the Small Business Regulatory Enforcement Fairness Act of 1996, 5 U.S.C. 801–808, DOE will submit to Congress a report regarding the issuance of today's final rule before the effective date set forth in the outset of this notice. The report will state that it has been determined that this rule is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 10 CFR Part 431

Administrative practice and procedure, Energy conservation, Incorporation by reference.

Issued in Washington, DC, July 26, 1999.

Dan W. Reicher,

Assistant Secretary for Energy Efficiency and Renewable Energy.

For the reasons set forth in the preamble, Chapter II of Title 10, Code of Federal Regulations (CFR), is amended by adding new Part 431 to read as set forth below.

PART 431—ENERGY EFFICIENCY PROGRAM FOR CERTAIN COMMERCIAL AND INDUSTRIAL EQUIPMENT

Subpart A—General Provisions

Sec.
431.1 Purpose and scope.
431.2 Definitions.
Appendix A to Subpart A of 10 CFR Part 431, Policy Statement for Electric Motors Covered Under the Energy Policy and Conservation Act

Subpart B—Test Procedures and Materials Incorporated

431.21 Purpose and scope.
431.22 Reference sources.
431.23 Test procedures for measurement of energy efficiency.
431.24 Determination of efficiency.
431.25 Testing laboratories.
431.26 Department of Energy recognition of accreditation bodies.
431.27 Department of Energy recognition of nationally recognized certification programs.
431.28 Procedures for recognition and withdrawal of recognition of accreditation bodies and certification programs.
431.29 Petitions for waiver, and applications for interim waiver, of test procedure.
Appendix A to Subpart B of Part 431—Uniform Test Method for Measuring Nominal Full Load Efficiency of Electric Motors

Subpart C—Energy Conservation Standards

431.41 Purpose and scope.
431.42 Energy conservation standards and effective dates.
431.43 Preemption of state regulations.

Subpart D—Petitions to Exempt State Regulation from Preemption; Petitions to Withdraw Exemption of State Regulation

431.61 Purpose and scope.
431.62 Prescriptions of a rule.
431.63 Filing requirements.
431.64 Notice of petition.
431.65 Consolidation.
431.66 Hearing.
431.67 Disposition of petitions.
431.68 Effective dates of final rules.
431.69 Request for reconsideration.
431.70 Finality of decision.

Subpart E—Labeling

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Subpart F—[Reserved]

Subpart G—Certification and Enforcement

431.121 Purpose and scope.
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431.123 Compliance Certification.
431.124 Maintenance of records.
431.125 Imported equipment.
431.126 Exported equipment.
431.127 Enforcement.
431.128 Cessation of distribution of a basic model.
431.129 Subpoena.
431.130 Remedies.
431.131 Hearings and appeals.
431.132 Confidentiality.
Appendix A to Subpart G of Part 431—Compliance Certification
Appendix B to Subpart G of Part 431—Sampling Plan for Enforcement Testing

Authority: 42 U.S.C. 6311–6316

Subpart A—General Provisions

§ 431.1 Purpose and scope.

This part establishes the regulations for the implementation of Part C of Title III of the Energy Policy and Conservation Act, as amended, 42 U.S.C. 6311–6316, which establishes an energy conservation program for certain industrial equipment.

§ 431.2 Definitions.

For purposes of this part, words shall be defined as provided for in section 340 of the Act and as follows—

Accreditation means recognition by an accreditation body that a laboratory is competent to test the efficiency of electric motors according to the scope and procedures given in Test Method B of IEEE Standard 112–1996, *Test Procedure for Polyphase Induction Motors and Generators,* and Test Method (1) of CSA Standard C390–93, *Energy Efficient Test Methods for Three-Phase Induction Motors.*

Accreditation body means an organization or entity that conducts and administers an accreditation system and grants accreditation.

Accreditation system means a set of requirements to be fulfilled by a testing laboratory, as well as rules of procedure and management, that are used to accredit laboratories.

Accredited laboratory means a testing laboratory to which accreditation has been granted.

Act means the Energy Policy and Conservation Act of 1975, as amended (42 U.S.C. 6291 *et seq.*).

Alternative efficiency determination method or *AEDM* means a method of calculating the total power loss and average full load efficiency of an electric motor.

Average full load efficiency means the arithmetic mean of the full load efficiencies of a population of electric motors of duplicate design, where the full load efficiency of each motor in the population is the ratio (expressed as a percentage) of the motor's useful power output to its total power input when the motor is operated at its full rated load, rated voltage, and rated frequency.

Basic model means all units of a given type of covered equipment (or class thereof) manufactured by a single manufacturer, and, with respect to electric motors, which have the same rating, have electrical characteristics that are essentially identical, and do not have any differing physical or functional characteristics which affect energy consumption or efficiency. For the purpose of this definition, ''rating'' means one of the 113 combinations of an electric motor's horsepower (or standard kilowatt equivalent), number of poles, and open or enclosed construction, with respect to which § 431.42 prescribes nominal full load efficiency standards.

Certificate of conformity means a document that is issued by a certification program, and that gives written assurance that an electric motor complies with the energy efficiency standard applicable to that motor, as specified in 10 CFR 431.42.

Certification program means a certification system that determines conformity by electric motors with the energy efficiency standards prescribed by and pursuant to the Act.

Certification system means a system, that has its own rules of procedure and management, for giving written assurance that a product, process, or service conforms to a specific standard or other specified requirements, and that is operated by an entity independent of both the party seeking the written assurance and the party providing the product, process or service.

Covered equipment means industrial equipment of a type specified in section 340 of the Act.

CSA means CSA International.

Definite purpose motor means any motor designed in standard ratings with standard operating characteristics or standard mechanical construction for use under service conditions other than usual, such as those specified in NEMA Standards Publication MG1–1993, *Motors and Generators,* paragraph 14.03, ''Unusual Service Conditions,'' or for use on a particular type of application, and which cannot be used in most general purpose applications.

DOE or *the Department* means the Department of Energy.

Electric motor is defined as follows:

(1) ''Electric motor'' means a machine which converts electrical power into rotational mechanical power and which:

(i) is a general purpose motor, including but not limited to motors with explosion-proof construction;

(ii) is a single speed, induction motor (MG1);

(iii) is rated for continuous duty (MG1) operation, or is rated duty type S1 (IEC);

(iv) contains a squirrel-cage (MG1) or cage (IEC) rotor, and has foot-mounting, including foot-mounting with flanges or detachable feet;

(v) is built in accordance with NEMA T-frame dimensions (MG1), or IEC metric equivalents (IEC);

(vi) has performance in accordance with NEMA Design A (MG1) or B (MG1) characteristics, or equivalent designs such as IEC Design N (IEC); and

(vii) operates on polyphase alternating current 60-Hertz sinusoidal power, and:

(A) is rated 230 volts or 460 volts, or both, including any motor that is rated at multi-voltages that include 230 volts or 460 volts, or

(B) can be operated on 230 volts or 460 volts, or both.

(2) Terms in this definition followed by the parenthetical ''MG1'' must be construed with reference to provisions in NEMA Standards Publication MG1–1993, *Motors and Generators,* with Revisions 1, 2, 3 and 4, as follows:

(i) Section I, *General Standards Applying to All Machines,* Part 1, *Referenced Standards and Definitions,* paragraphs 1.16.1, 1.16.1.1, 1.17.1.1, 1.17.1.2, and 1.40.1 pertain to the terms ''induction motor,'' ''squirrel-cage,'' ''NEMA Design A,'' ''NEMA Design B,'' and ''continuous duty'' respectively;

(ii) Section I, *General Standards Applying to All Machines,* Part 4, *Dimensions, Tolerances, and Mounting,* paragraph 4.01 and Figures 4–1, 4–2, 4–3, and 4–4 pertain to ''NEMA T-frame dimensions;''

(iii) Section II, *Small (Fractional) and Medium (Integral) Machines,* Part 11, *Dimensions—AC and DC Small and Medium Machines,* paragraphs 11.01.2, 11.31 (except the lines for frames 447T, 447TS, 449T and 449TS), 11.32, 11.34 (except the line for frames 447TC and 449TC, and the line for frames 447TSC and 449TSC), 11.35, and 11.36 (except the line for frames 447TD and 449TD, and the line for frames 447TSD and 449TSD), and Table 11–1, pertain to ''NEMA T-frame dimensions;'' and

(iv) Section II, *Small (Fractional) and Medium (Integral) Machines,* Part 12, *Tests and Performance—AC and DC Motors,* paragraphs 12.35.1, 12.35.5, 12.38.1, 12.39.1, and 12.40.1, and Table 12–2, pertain both to ''NEMA Design A'' and ''NEMA Design B.''

(3) Terms in this definition followed by the parenthetical ''IEC'' must be construed with reference to provisions in IEC Standards as follows:

(i) IEC Standard 60034–1 (1996), *Rotating electrical machines,* Part 1: *Rating and performance,* with Amendment 1 (1997), Section 3: *Duty,* clause 3.2.1 and figure 1 pertain to ''duty type S1'';

(ii) IEC Standard 60050–411 (1996), *International Electrotechnical Vocabulary Chapter 411: Rotating machines,* sections 411–33–07 and 411–37–26, pertain to ''cage'';

(iii) IEC Standard 60072–1 (1991), *Dimensions and output series for rotating electrical machines—Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080,* clauses 2, 3, 4.1, 6.1, 7, and 10, and Tables 1, 2 and 4, pertain to ''IEC metric equivalents'' to ''T-frame'' dimensions; and

(iv) IEC Standard 60034–12 (1980), *Rotating electrical machines, Part 12: Starting performance of single-speed three-phase cage induction motors for voltages up to and including 660 V,* with Amendment 1 (1992) and Amendment 2 (1995), clauses 1, 2, 3.1, 4, 5, and 6, and Tables I, II, and III, pertain to ''IEC Design N.''

Enclosed motor means an electric motor so constructed as to prevent the free exchange of air between the inside and outside of the case but not sufficiently enclosed to be termed airtight.

EPCA means the Energy Policy and Conservation Act of 1975, as amended (42 U.S.C. 6291 *et seq.*).

General purpose motor means any motor which is designed in standard ratings with either:

(1) Standard operating characteristics and standard mechanical construction for use under usual service conditions, such as those specified in NEMA Standards Publication MG1–1993, paragraph 14.02, ''Usual Service Conditions,'' and without restriction to a particular application or type of application; or

(2) Standard operating characteristics or standard mechanical construction for use under unusual service conditions, such as those specified in NEMA Standards Publication MG1–1993, paragraph 14.03, ''Unusual Service Conditions,'' or for a particular type of application, and which can be used in most general purpose applications.

IEC means the International Electrotechnical Commission.

IEEE means the Institute of Electrical and Electronics Engineers, Inc.

ISO means International Organization for Standardization.

Manufacture means to manufacture, produce, assemble, or import.

NEMA means the National Electrical Manufacturers Association.

Nominal full load efficiency of an electric motor means a representative value of efficiency selected from Column A of Table 12–8, NEMA Standards Publication MG1–1993, that is not greater than the average full load efficiency of a population of motors of the same design.

Open motor means an electric motor having ventilating openings which permit passage of external cooling air over and around the windings of the machine.

Secretary means the Secretary of the Department of Energy.

Special purpose motor means any motor, other than a general purpose motor or definite purpose motor, which has special operating characteristics or special mechanical construction, or both, designed for a particular application.

Total power loss means that portion of the energy used by an electric motor not converted to rotational mechanical power, expressed in percent.

Appendix A to Subpart A of 10 CFR Part 431, Policy Statement for Electric Motors Covered Under the Energy Policy and Conservation Act

This is a reprint of a policy statement which was published on November 5, 1997 at 62 FR 59978.

Policy Statement for Electric Motors Covered Under the Energy Policy and Conservation Act

I. Introduction

The Energy Policy and Conservation Act (EPCA), 42 U.S.C. 6311, *et seq.*, establishes energy efficiency standards and test procedures for certain commercial and industrial electric motors manufactured (alone or as a component of another piece of equipment) after October 24, 1997, or, in the case of an electric motor which requires listing or certification by a nationally recognized safety testing laboratory, after October 24, 1999.[1] EPCA also directs the Department of Energy (DOE or Department) to implement the statutory test procedures prescribed for motors, and to require efficiency labeling of motors and certification that covered motors comply with the standards.

Section 340(13)(A) of EPCA defines the term ''electric motor'' based essentially on the construction and rating system in the National Electrical Manufacturers Association (NEMA) Standards Publication MG1. Sections 340(13)(B) and (C) of EPCA define the terms ''definite purpose motor'' and ''special purpose motor,'' respectively, for which the statute prescribes no efficiency standards.

In its proposed rule to implement the EPCA provisions that apply to motors (61 FR 60440, November 27, 1996), DOE has proposed to clarify the statutory definition of ''electric motor,'' to mean a machine which converts electrical power into rotational mechanical power and which: (1) is a general purpose motor, including motors with explosion-proof construction;[2] (2) is a single speed, induction motor; (3) is rated for continuous duty operation, or is rated duty type S–1 (IEC)[3]; (4) contains a squirrel-cage or cage (IEC) rotor; (5) has foot-mounting, including foot-mounting with flanges or detachable feet; (6) is built in accordance with NEMA T-frame dimensions, or IEC metric equivalents (IEC); (7) has performance in accordance with NEMA Design A or B characteristics, or equivalent designs such as IEC Design N (IEC); and (8) operates on polyphase alternating current 60-Hertz sinusoidal power, and is (i) rated 230 volts or 460 volts, or both, including any motor that is rated at multi-voltages that include 230 volts or 460 volts, or (ii) can be operated on 230 volts or 460 volts, or both.

Notwithstanding the clarification provided in the proposed rule, there still appears to be uncertainty as to which motors EPCA covers. It is widely understood that the statute covers ''general purpose'' motors that are manufactured for a variety of applications, and that meet EPCA's definition of ''electric motor.'' Many modifications, however, can be made to such generic motors. Motor manufacturers have expressed concern as to precisely which motors with such modifications are covered under the statute, and as to whether manufacturers will be able to comply with the statute by October 25, 1997 with respect to all of these covered motors. Consequently, motor manufacturers have requested that the Department provide additional guidance as to which types of motors are ''electric motors,'' ''definite purpose motors,'' and ''special purpose motors'' under EPCA. The policy statement that follows is based upon input from motor manufacturers and energy efficiency advocates, and provides such guidance.

II. Guidelines for Determining Whether a Motor Is Covered by EPCA

A. General

EPCA specifies minimum nominal full-load energy efficiency standards for 1 to 200 horsepower electric motors, and, to measure compliance with those standards, prescribes use of the test procedures in NEMA Standard MG1 and Institute of Electrical and Electronics Engineers, Inc., (IEEE) Standard 112. In DOE's view, as stated in Assistant Secretary Ervin's letter of May 9, 1996, to NEMA's Malcolm O'Hagan, until DOE's regulations become effective, manufacturers can establish compliance with these EPCA requirements through use of competent and reliable procedures or methods that give reasonable assurance of such compliance. So long as these criteria are met, manufacturers may conduct required testing in their own laboratories or in independent laboratories, and may employ alternative correlation methods (in lieu of actual testing) for some motors. Manufacturers may also establish their compliance with EPCA standards and test procedures through use of third party certification or verification programs such as those recognized by Natural Resources Canada. Labeling and certification requirements will become effective only after DOE has promulgated a final rule prescribing such requirements.

Motors with features or characteristics that do not meet the statutory definition of ''electric motor'' are not covered, and therefore are not required to meet EPCA requirements. Examples include motors without feet and without provisions for feet, and variable speed motors operated on a variable frequency power supply. Similarly, multispeed motors and variable speed motors, such as inverter duty motors, are not covered equipment, based on their intrinsic design for use at variable speeds. However, NEMA Design A or B motors that are single speed, meet all other criteria under the definitions in EPCA for covered

[1] The term ''manufacture'' means ''to manufacture, produce, assemble or import.'' EPCA section 321(10). Thus, the standards apply to motors produced, assembled, imported or manufactured after these statutory deadlines.

[2] Section 342(b)(1) of EPCA recognizes that EPCA's efficiency standards cover ''motors which require listing or certification by a nationally recognized safety testing laboratory.'' This applies, for example, to explosion-proof motors which are otherwise general purpose motors.

[3] Terms followed by the parenthetical ''IEC'' are referred to in the International Electrotechnical Commission (IEC) Standard 34–1. Such terms are included in DOE's proposed definition of ''electric motor'' because DOE believes EPCA's efficiency requirements apply to metric system motors that conform to IEC Standard 34, and that are identical or equivalent to motors constructed in accordance with NEMA MG1 and covered by the statute.

equipment, and can be used with an inverter in variable speed applications as an additional feature, are covered equipment under EPCA. In other words, being suitable for use on an inverter by itself does not exempt a motor from EPCA requirements.

Section 340(13)(F) of EPCA, defines a ''small electric motor'' as ''a NEMA general purpose alternating current single-speed induction motor, built in a two-digit frame number series in accordance with NEMA Standards Publication MG 1–1987.'' Section 346 of EPCA requires DOE to prescribe testing requirements and efficiency standards only for those small electric motors for which the Secretary determines that standards are warranted. The Department has not yet made such a determination.

B. Electrical Features

As noted above, the Department's proposed definition of ''electric motor'' provides in part that it is a motor that ''operates on polyphase alternating current 60-Hertz sinusoidal power, and * * * can be operated on 230 volts or 460 volts, or both.'' In DOE's view, ''can be operated'' implicitly means that the motor can be operated successfully. According to NEMA Standards Publication MG1–1993, paragraph 12.44, ''Variations from Rated Voltage and Rated Frequency,'' alternating-current motors must operate successfully under running conditions at rated load with a variation in the voltage or the frequency up to the following: plus or minus 10 percent of rated voltage, with rated frequency for induction motors;[4] plus or minus 5 percent of rated frequency, with rated voltage; and a combined variation in voltage and frequency of 10 percent (sum of absolute values) of the rated values, provided the frequency variation does not exceed plus or minus 5 percent of rated frequency. DOE believes that, for purposes of determining whether a motor meets EPCA's definition of ''electric motor,'' these criteria should be used to determine when a motor that is not rated at 230 or 460 volts or 60 Hertz can be operated at such voltage and frequency.[5]

NEMA Standards Publication MG1 categorizes electrical modifications to motors according to performance characteristics that include locked rotor torque, breakdown torque, pull-up torque, locked rotor current, and slip at rated load, and assigns design letters, such as Design A, B, C, D, or E, to identify various combinations of such electrical performance characteristics. Under section 340(13)(A) of EPCA, electric motors subject to EPCA efficiency requirements include only motors that fall within NEMA ''Design A and B * * * as defined in [NEMA] Standards Publication MG1–1987.'' As to locked rotor torque, for example, MG1 specifies a minimum performance value for a Design A or B motor of a given speed and horsepower, and somewhat higher minimum values for Design C and D motors of the same speed and horsepower. The Department understands that, under MG1, the industry classifies a motor as Design A or B if it has a locked rotor torque at or above the minimum for A and B but below the minimum for Design C, so long as it otherwise meets the criteria for Design A or B. Therefore, in the Department's view, such a motor is covered by EPCA's requirements for electric motors. By contrast a motor that meets or exceeds the minimum locked rotor torque for Design C or D is not covered by EPCA. In sum, if a motor has electrical modifications that meet Design A or B performance requirements it is covered by EPCA, and if its characteristics meet Design C, D or E it is not covered.

C. Size

Motors designed for use on a particular type of application which are in a frame size that is one or more frame *series* larger than the frame size assigned to that rating by sections 1.2 and 1.3 of NEMA Standards Publication MG 13–1984 (R1990), ''Frame Assignments for Alternating Current Integral-Horsepower Induction Motors,'' are not, in the Department's view, usable in most general purpose applications. This is due to the physical size increase associated with a frame series change. A frame series is defined as the first two digits of the frame size designation. For example, 324T and 326T are both in the same frame series, while 364T is in the next larger frame series. Hence, in the Department's view, a motor that is of a larger frame series than normally assigned to that standard rating of motor is not covered by EPCA. A physically larger motor within the same frame series would be covered, however, because it would be usable in most general purpose applications.

Motors built in a T-frame series or a T-frame size *smaller* than that assigned by MG 13–1984 (R1990) are also considered usable in most general purpose applications. This is because simple modifications can generally be made to fit a smaller motor in place of a motor with a larger frame size assigned in conformity with NEMA MG 13. Therefore, DOE believes that such smaller motors are covered by EPCA.

D. Motors with Seals

Some electric motors have seals to prevent ingress of water, dust, oil, and other foreign materials into the motor. DOE understands that, typically, a manufacturer will add seals to a motor that it manufactures, so that it will sell two motors that are identical except that one has seals and the other does not. In such a situation, if the motor without seals is ''general purpose'' and covered by EPCA's efficiency requirements, then the motor with seals will also be covered because it can still be used in most general purpose applications. DOE understands, however, that manufacturers previously believed motors with seals were not covered under EPCA, in part because IEEE Standard 112, ''Test Procedure for Polyphase Induction Motors and Generators,'' prescribed by EPCA, does not address how to test a motor with seals installed.

The efficiency rating of such a motor, if determined with seals installed and when the motor is new, apparently would significantly understate the efficiency of the motor as operated. New seals are stiff, and provide friction that is absent after their initial break-in period. DOE understands that, after this initial period, the efficiency ratings determined for the same motor with and without seals would be virtually identical. To construe EPCA, therefore, as requiring such separate efficiency determinations would impose an unnecessary burden on manufacturers.

In light of the foregoing, the Department believes that EPCA generally permits the efficiency of a motor with seals to be determined without the seals installed. Furthermore, notwithstanding the prior belief that such motors are not covered by EPCA, use of this approach to determining efficiency will enable manufacturers to meet EPCA's standards

[4] For example, a motor that is rated at 220 volts should operate successfully on 230 volts, since 220 + .10(220) = 242 volts. A 208 volt motor, however, would not be expected to operate successfully on 230 volts, since 208 + .10(208) = 228.8 volts.

[5] The Department understands that a motor that can operate at such voltage and frequency, based on variations defined for successful operation, will not necessarily perform in accordance with the industry standards established for operation at the motor's *rated* voltage and frequency. In addition, under the test procedures prescribed by EPCA, motors are to be tested at their rated values. Therefore, in DOE's view a motor that is not rated for 230 or 460 volts, or 60 Hertz, but that can be successfully operated at these levels, must meet the energy efficiency requirements at its rated voltage(s) and frequency. DOE also notes that when a motor is rated to include a wider voltage range that includes 230/460 volts, the motor should meet the energy efficiency requirements at 230 volts or 460 volts.

with respect to covered motors with seals by the date the standards go into effect on October 25, 1997.

III. Discussion of How DOE Would Apply EPCA Definitions, Using the Foregoing Guidelines

Using the foregoing guidelines, the attached matrix provides DOE's view as to which motors with common features are covered by EPCA. Because manufacturers produce many basic models that have many modifications of generic general purpose motors, the Department does not represent that the matrix is all-inclusive. Rather it is a set of examples demonstrating how DOE would apply EPCA definitions, as construed by the above guidelines, to various motor types. By extension of these examples, most motors currently in production, or to be designed in the future, could probably be classified. The matrix classifies motors into five categories, which are discussed in the following passages.

Category I—For ''electric motors'' (manufactured alone or as a component of another piece of equipment) in Category I, DOE will enforce EPCA efficiency standards and test procedures beginning on October 25, 1997

The Department understands that some motors essentially are relatively simple modifications of generic general purpose motors. Modifications could consist, for example, of minor changes such as the addition of temperature sensors or a heater, the addition of a shaft extension and a brake disk from a kit, or changes in exterior features such as the motor housing. Such motors can still be used for most general purpose applications, and the modifications have little or no effect on motor performance. Nor do the modifications affect energy efficiency.

Category II—For certain motors that are ''definite purpose'' according to present industry practice, but that can be used in most general purpose applications, DOE will generally enforce EPCA efficiency standards and test procedures beginning no later than October 25, 1999

General Statement

EPCA does not prescribe standards and test procedures for ''definite purpose motors.'' Section 340(13)(B) of EPCA defines the term ''definite purpose motor'' as ''any motor designed in standard ratings with standard operating characteristics or standard mechanical construction for use under service conditions other than usual or for use on a particular type of application *and which cannot be used in most general purpose applications.*'' [Emphasis added.] Except, significantly, for exclusion of the italicized language, the industry definition of ''definite purpose motor,'' set forth in NEMA MG1, is identical to the foregoing.

Category II consists of electric motors with horsepower ratings that fall between the horsepower ratings in section 342(b)(1) of EPCA, thermally protected motors, and motors with roller bearings. As with motors in Category I, these motors are essentially modifications of generic general purpose motors. Generally, however, the modifications contained in these motors are more extensive and complex than the modifications in Category I motors. These Category II motors have been considered ''definite purpose'' in common industry parlance, but are covered equipment under EPCA because they *can be used in most general purpose applications.*

According to statements provided during the January 15, 1997, Public Hearing, Tr. pgs. 238–239, Category II motors were, until recently, viewed by most manufacturers as definite purpose motors, consistent with the industry definition that did not contain the clause ''which cannot be used in most general purpose applications.'' Hence, DOE understands that many manufacturers assumed these motors were not subject to EPCA's efficiency standards. During the period prior and subsequent to the hearing, discussions among manufacturers resulted in a new understanding that such motors are general purpose under EPCA, since they *can* be used in most general purpose applications. Thus, the industry only recently recognized that such motors are covered under EPCA. Although the statutory definition adopted in 1992 contained the above-quoted definition of ''definite purpose,'' the delay in issuing regulations which embody this definition may have contributed to industry's delay in recognizing that these motors are covered.

The Department understands that redesign and testing these motors in order to meet the efficiency standards in the statute may require a substantial amount of time. Given the recent recognition that they are covered, it is not realistic to expect these motors will be able to comply by October 25, 1997. A substantial period beyond that will be required. Moreover, the Department believes different manufacturers will need to take different approaches to achieving compliance with respect to these motors, and that, for a particular type of motor, some manufacturers will be able to comply sooner than others. Thus, the Department intends to refrain from taking enforcement action for two years, until October 25, 1999, with respect to motors with horsepower ratings that fall between the horsepower ratings in section 342(b)(1) of EPCA, thermally protected motors, and motors with roller bearings. Manufacturers are encouraged, however, to manufacture these motors in compliance with EPCA at the earliest possible date.

The following sets forth in greater detail, for each of these types of motors, the basis for the Department's policy to refrain from enforcement for two years. Also set forth is additional explanation of the Department's understanding as to why manufacturers previously believed intermediate horsepower motors were not covered by EPCA.

Intermediate Horsepower Ratings

Section 342(b)(1) of EPCA specifies efficiency standards for electric motors with 19 specific horsepower ratings, ranging from one through 200 horsepower. Each is a preferred or standardized horsepower rating as reflected in the table in NEMA Standards Publication MG1–1993, paragraph 10.32.4, *Polyphase Medium Induction Motors.* However, an ''electric motor,'' as defined by EPCA, can be built at other horsepower ratings, such as 6 horsepower, 65 horsepower, or 175 horsepower. Such motors, rated at horsepower levels between any two adjacent horsepower ratings identified in section 342(b)(1) of EPCA will be referred to as ''intermediate horsepower motors.'' In the Department's view, efficiency standards apply to every motor that has a rating from one through 200 horsepower (or kilowatt equivalents), and that otherwise meets the criteria for an ''electric motor'' under EPCA, including an electric motor with an intermediate horsepower (or kW) rating.

To date, these motors have typically been designed in conjunction with and supplied to a specific customer to fulfill certain performance and design requirements of a particular application, as for example to run a certain type of equipment. See the discussion in Section IV below on ''original equipment'' and ''original equipment manufacturers.'' In large part for these reasons, manufacturers believed intermediate horsepower motors to be ''definite purpose motors'' that were not covered by EPCA. Despite their specific uses, however, these motors are electric motors under EPCA when they are capable of being used in most general purpose applications.

Features of a motor that are directly related to its horsepower rating include

its physical size, and the ratings of its controller and protective devices. These aspects of a 175 horsepower motor, for example, which is an intermediate horsepower motor, must be appropriate to that horsepower, and would generally differ from the same aspects of 150 and 200 horsepower motors, the two standard horsepower ratings closest to 175. To re-design an existing intermediate horsepower electric motor so that it complies with EPCA could involve all of these elements of a motor's design. For example, the addition of material necessary to achieve EPCA's prescribed level of efficiency could cause the size of the motor to increase. The addition of magnetic material would invite higher inrush current that could cause an incorrectly sized motor controller to malfunction, or the circuit breaker with a standard rating to trip unnecessarily, or both. The Department believes motor manufacturers will require a substantial amount of time to redesign and retest each intermediate horsepower electric motor they manufacture.

To the extent such intermediate horsepower electric motors become unavailable because motor manufacturers have recognized only recently that they are covered by EPCA, equipment in which they are incorporated would temporarily become unavailable also. Moreover, re-design of such a motor to comply with EPCA could cause changes in the motor that require re-design of the equipment in which the motor is used. For example, if an intermediate horsepower electric motor becomes larger, it might no longer fit in the equipment for which it was designed. In such instances, the equipment would have to be re-designed. Because these motors were previously thought not to be covered, equipment manufacturers may not have had sufficient lead time to make the necessary changes to the equipment without interrupting its production.

With respect to intermediate horsepower motors, the Department intends to refrain from enforcing EPCA for a period of 24 months only as to such motor designs that were being manufactured prior to the date this Policy Statement was issued. The Department is concerned that small adjustments could be made to the horsepower rating of an existing electric motor, in an effort to delay compliance with EPCA, if it delayed enforcement as to all intermediate horsepower motors produced during the 24 month period. For example, a 50 horsepower motor that has a service factor of 1.15 could be renameplated as a 57½ horsepower motor that has a 1.0 service factor. By making this delay in enforcement applicable only to pre-existing designs of intermediate horsepower motors, the Department believes it has made adequate provision for the manufacture of bona fide intermediate horsepower motor designs that cannot be changed to be in compliance with EPCA by October 25, 1997.

Thermally Protected Motors

The Department understands that in order to redesign a thermally protected motor to improve its efficiency so that it complies with EPCA, various changes in the windings must be made which will require the thermal protector to be re-selected. Such devices sense the inrush and running current of the motor, as well as the operating temperature. Any changes to a motor that affect these characteristics will prevent the protector from operating correctly. When a new protector is selected, the motor must be tested to verify proper operation of the device in the motor. The motor manufacturer would test the locked rotor and overload conditions, which could take several days, and the results may dictate that a second selection is needed with additional testing. When the manufacturer has finished testing, typically the manufacturer will have a third party conduct additional testing. This testing may include cycling the motor in a locked-rotor condition to verify that the protector functions properly. This testing may take days or even weeks to perform for a particular model of motor.

Since it was only recently recognized by industry that these motors are covered by EPCA, in the Department's view the total testing program makes it impossible for manufacturers to comply with the EPCA efficiency levels in thermally protected motors by October 25, 1997, especially since each different motor winding must be tested and motor winding/thermal protector combinations number in the thousands.

Motors With Roller Bearings

Motors with roller bearings fit within the definition of electric motor under the statute. However, because the IEEE Standard 112 Test Method B does not provide measures to test motors with roller bearings installed, manufacturers mistakenly believed such motors were not covered. Under IEEE Standard 112, a motor with roller bearings could only be tested for efficiency with the roller bearings removed and standard ball bearings installed as temporary substitutes. Then on the basis of the energy efficiency information gained from that test, the manufacturer may need to redesign the motor in order to comply with the statute. In this situation, the Department understands that testing, redesigning, and retesting lines of motors with roller bearings, to establish compliance, would be difficult and time consuming.

Categories III, IV and V—Motors not within EPCA's definition of ''electric motor,'' and not covered by EPCA

Close-coupled Pump Motors

NEMA Standards Publication MG1–1993, with revisions one through three, Part 18, ''Definite-Purpose Machines,'' defines ''a face-mounting close-coupled pump motor'' as ''a medium alternating-current squirrel-cage induction open or totally enclosed motor, with or without feet, having a shaft suitable for mounting an impeller and sealing device.'' Paragraphs MG1–18.601–18.614 specify its performance, face and shaft mounting dimensions, and frame assignments that replace the suffix letters T and TS with the suffix letters JM and JP.

The Department understands that such motors are designed in standard ratings with standard operating characteristics for use in certain close-coupled pumps and pumping applications, but cannot be used in non-pumping applications, such as, for example, conveyors. Consequently, the Department believes close-coupled pump motors are definite-purpose motors not covered by EPCA. However, a motor that meets EPCA's definition of ''electric motor,'' and which can be coupled to a pump, for example by means of a C-face or D-flange endshield, as depicted in NEMA Standards Publication MG1, Part 4, ''Dimensions, Tolerances, and Mounting,'' is covered.

Totally-enclosed Non-ventilated (TENV) and Totally-enclosed Air-over (TEAO) Motors

A motor designated in NEMA MG1–1993, paragraph MG1–1.26.1, as ''totally-enclosed non-ventilated (IP54, IC410)'' [6] is ''not equipped for cooling by means external to the enclosing parts.'' This means that the motor, when properly applied, does not require the use of any additional means of cooling

[6] IP refers to the IEC Standard 34–5: Classification of degrees of protection provided by enclosures for rotating machines. IC refers to the IEC Standard 34–6: Methods of cooling rotating machinery. The IP and IC codes are referenced in the NEMA designations for TENV and TEAO motors in MG1–1993 Part 1, ''Classification According to Environmental Protection and Methods of Cooling,'' as a Suggested Standard for Future Design, since the TENV and TEAO motors conform to IEC Standards. Details of protection (IP) and methods of cooling (IC) are defined in MG1 Part 5 and Part 6, respectively.

installed external to the motor enclosure. The TENV motor is cooled by natural conduction and natural convection of the motor heat into the surrounding environment. As stated in NEMA MG1–1993, Suggested Standard for Future Design, paragraph MG1–1.26.1a, a TENV motor ''is only equipped for cooling by free convection.'' The general requirement for the installation of the TENV motor is that it not be placed in a restricted space that would inhibit this natural dissipation of the motor heat. Most general purpose applications use motors which include a means for forcing air flow through or around the motor and usually through the enclosed space and, therefore, can be used in spaces that are more restrictive than those required for TENV motors. Placing a TENV motor in such common restricted areas is likely to cause the motor to overheat. The TENV motor may also be larger than the motors used in most general purpose applications, and would take up more of the available space, thus reducing the size of the open area surrounding the motor. Installation of a TENV motor might require, therefore, an additional means of ventilation to continually exchange the ambient around the motor.

A motor designated in NEMA MG1–1993 as ''totally-enclosed air-over (IP54, IC417)'' is intended to be cooled by ventilation means external to (i.e., separate and independent from) the motor, such as a fan. The motor must be provided with the additional ventilation to prevent it from overheating.

Consequently, neither the TENV motor nor the TEAO motor would be suitable for most general purpose applications, and, DOE believes they are definite-purpose motors not covered by EPCA.

Integral Gearmotors

An ''integral gearmotor'' is an assembly of a motor and a specific gear drive or assembly of gears, such as a gear reducer, as a unified package. The motor portion of an integral gearmotor is not necessarily a complete motor, since the end bracket or mounting flange of the motor portion is also part of the gear assembly and cannot be operated when separated from the complete gear assembly. Typically, an integral gearmotor is not manufactured to standard T-frame dimensions specified in NEMA MG1. Moreover, neither the motor portion, nor the entire integral gearmotor, are capable of being used in most general purpose applications without significant modifications. An integral gearmotor is also designed for a specific purpose and can have unique performance characteristics, physical dimensions, and casing, flange and shafting configurations. Consequently, integral gearmotors are outside the scope of the EPCA definition of ''electric motor'' and are not covered under EPCA.

However, an ''electric motor,'' as defined by EPCA, which is connected to a stand alone mechanical gear drive or an assembly of gears, such as a gear reducer connected by direct coupling, belts, bolts, a kit, or other means, is covered equipment under EPCA.

IV. Electric Motors That Are Components in Certain Equipment

The primary function of an electric motor is to convert electrical energy to mechanical energy which then directly drives machinery such as pumps, fans, or compressors. Thus, an electric motor is always connected to a driven machine or apparatus. Typically the motor is incorporated into a finished product such as an air conditioner, a refrigerator, a machine tool, food processing equipment, or other commercial or industrial machinery. These products are commonly known as ''original equipment'' or ''end-use equipment,'' and are manufactured by firms known as ''original equipment manufacturers'' (OEMs).

Many types of motors used in original equipment are covered under EPCA. As noted above, EPCA prescribes efficiency standards to be met by all covered electric motors manufactured after October 24, 1997, except that covered motors which require listing or certification by a nationally recognized safety testing laboratory need not meet the standards until after October 24, 1999. Thus, for motors that must comply after October 24, 1997, once inventories of motors manufactured before the deadline have been exhausted, only complying motors would be available for purchase and use by OEMs in manufacturing original equipment. Any non-complying motors previously included in such equipment would no longer be available.

The physical, and sometimes operational, characteristics of motors that meet EPCA efficiency standards normally differ from the characteristics of comparable existing motors that do not meet those standards. In part because of such differences, the Department is aware of two types of situations where strict application of the October 24, 1997 deadline could temporarily prevent the manufacture of, and remove from the marketplace, currently available original equipment.

One such situation is where an original equipment manufacturer uses an electric motor as a component in end-use equipment that requires listing or certification by a nationally recognized safety testing laboratory, even though the motor itself does not require listing or certification. In some of these instances, the file for listing or certification specifies the particular motor to be used. No substitution could be made for the motor without review and approval of the new motor and the entire system by the safety testing laboratory. Consequently, a specified motor that does not meet EPCA standards could not be replaced by a complying motor without such review and approval.

This re-listing or re-certification process is subject to substantial variation from one piece of original equipment to the next. For some equipment, it could be a simple paperwork transaction between the safety listing or certification organization and the OEM, taking approximately four to eight weeks to complete. But the process could raise more complex system issues involving redesign of the motor or piece of equipment, or both, and actual testing to assure that safety and performance criteria are met, and could take several months to complete. The completion time could also vary depending on the response time of the particular safety approval agency. Moreover, in the period immediately after October 24, the Department believes wholesale changes could occur in equipment lines when OEMs must begin using motors that comply with EPCA. These changes are likely to be concentrated in the period immediately after EPCA goes into effect on October 24, and if many OEMs seek to re-list or re-certify equipment at the same time, substantial delays in the review and approval process at the safety approval agencies could occur. For these reasons, the Department is concerned that certain end-user equipment that requires safety listing or certification could become unavailable in the marketplace, because an electric motor specifically identified in a listing or certification is covered by EPCA and will become unavailable, and the steps have not been completed to obtain safety approval of the equipment when manufactured with a complying motor.

Second, a situation could exist where an electric motor covered by EPCA is constructed in a T-frame series or T-frame size that is smaller (but still standard) than that assigned by NEMA Standards Publication MG 13–1984 (R1990), sections 1.2 and 1.3, in order to fit into a restricted mounting space that is within certain end-use equipment. (Motors in IEC metric frame sizes and kilowatt ratings could also be

involved in this type of situation.) In such cases, the manufacturer of the end-use equipment might need to redesign the equipment containing the mounting space to accommodate a larger motor that complies with EPCA. These circumstances as well could result in certain currently available equipment becoming temporarily unavailable in the market, since the smaller size motor would become unavailable before the original equipment had been re-designed to accommodate the larger, complying motor.

The Department understands that many motor manufacturers and OEMs became aware only recently that the electric motors addressed in the preceding paragraphs were covered by EPCA. This is largely for the same reasons, discussed above, that EPCA coverage of Category II motors was only recently recognized. In addition, the Department understands that some motor manufacturers and original equipment manufacturers confused motors that themselves require safety listing or certification, which need not comply until October 25, 1999, with motors that, while not subject to such requirements, are included in *original equipment* that requires safety listing or certification. Consequently, motor manufacturers and original equipment manufacturers took insufficient action to assure that appropriate complying motors would be available for the original equipment involved, and that the equipment could accommodate such motors. OEMs involved in such situations may often be unable to switch to motors that meet EPCA standards in the period immediately following October 24. To mitigate any hardship to purchasers of the original equipment, the Department intends to refrain from enforcing EPCA in certain limited circumstances, under the conditions described below.

Where a particular electric motor is specified in an approved safety listing or certification for a piece of original equipment, and the motor does not meet the applicable efficiency standard in EPCA, the Department's policy will be as follows: For the period of time necessary for the OEM to obtain a revised safety listing or certification for that piece of equipment, with a motor specified that complies with EPCA, but in no event beyond October 24, 1999, the Department would refrain from taking enforcement action under EPCA with respect to manufacture of the motor for installation in such original equipment. This policy would apply only where the motor has been manufactured and specified in the approved safety listing or certification prior to October 25, 1997.

Where a particular electric motor is used in a piece of original equipment and manufactured in a smaller than assigned frame size or series, and the motor does not meet the applicable efficiency standard in EPCA, the Department's policy will be as follows: For the period of time necessary for the OEM to re-design the piece of equipment to accommodate a motor that complies with EPCA, but in no event beyond October 24, 1999, the Department would refrain from enforcing the standard with respect to manufacture of the motor for installation in such original equipment. This policy would apply only to a model of motor that has been manufactured and included in the original equipment prior to October 25, 1997.

To allow the Department to monitor application of the policy set forth in the prior two paragraphs, the Department needs to be informed as to the motors being manufactured under the policy. Therefore, each motor manufacturer and OEM should jointly notify the Department as to each motor they will be manufacturing and using, respectively, after October 24, 1997, in the belief that it is covered by the policy. The notification should set forth: (1) the name of the motor manufacturer, and a description of the motor by type, model number, and date of design or production; (2) the name of the original equipment manufacturer, and a description of the application where the motor is to be used; (3) the safety listing or safety certification organization and the existing listing or certification file or document number for which re-listing or re-certification will be requested, if applicable; (4) the reason and amount of time required for continued production of the motor, with a statement that a substitute electric motor that complies with EPCA could not be obtained by an earlier date; and (5) the name, address, and telephone number of the person to contact for further information. The joint request should be signed by a responsible official of each requesting company, and sent to: U.S. Department of Energy, Assistant Secretary for Energy Efficiency and Renewable Energy, Office of Building Research and Standards, EE–41, Forrestal Building, 1000 Independence Avenue, SW, Room 1J–018, Washington, DC 20585–0121. The Department does not intend to apply this policy to any motor for which it does not receive such a notification. Moreover, the Department may use the notification, and make further inquiries, to be sure motors listed in the notification meet the criteria for application of the policy.

This part of the Policy Statement will not apply to a motor in Category II, discussed above in section III. Because up to 24 months is contemplated for compliance by Category II motors, the Department believes any issues that might warrant a delay of enforcement for such motors can be addressed during that time period.

V. Further Information

The Department intends to incorporate this Policy Statement into an appendix to its final rule to implement the EPCA provisions that apply to motors. Any comments or suggestions with respect to this Policy Statement, as well as requests for further information, should be addressed to the Director, Office of Building Research and Standards, EE–41, U.S. Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585–0121.

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EXAMPLES OF MANY COMMON FEATURES OR MOTOR MODIFICATIONS TO ILLUSTRATE HOW THE EPCA DEFINITIONS AND DOE GUIDELINES WOULD BE APPLIED TO MOTOR CATEGORIES: GENERAL PURPOSE; DEFINITE PURPOSE; AND SPECIAL PURPOSE

	MOTOR MODIFICATION	CATEGORY[7]					EXPLANATION
		I	II	III	IV	V	
A.	**ELECTRICAL MODIFICATIONS**						
1	ALTITUDE	X					General purpose up to a frame series change larger.
2	AMBIENT	X					General purpose up to a frame series change larger.
3	MULTISPEED					X	EPCA applies to single speed only.
4	SPECIAL LEADS	X					
5	SPECIAL INSULATION	X					
6	ENCAPSULATION				X		Due to special construction.
7	HIGH SERVICE FACTOR	X					General purpose up to a frame series change larger.
8	SPACE HEATERS	X					
9	WYE DELTA START	X					
10	PART WINDING START	X					
11	TEMPERATURE RISE	X					General purpose up to a frame series change larger.
12	THERMALLY PROTECTED		X				Requires retesting and third party agency approval.
13	THERMOSTAT/THERMISTOR	X					
14	SPECIAL VOLTAGES					X	EPCA applies to motors operating on 230/460 voltages at 60 Hertz.
15	INTERMEDIATE HORSEPOWERS		X				Round horsepower according to 10 CFR 431.42 for efficiency.
16	FREQUENCY					X	EPCA applies to motors operating on 230/460 voltages at 60 Hertz.
17	FUNGUS/TROP INSULATION	X					

[7]Category I - General purpose electric motors as defined in EPCA.
Category II - Definite purpose electric motors that can be used in most general purpose applications as defined in EPCA.
Category III - Definite purpose motors as defined in EPCA.
Category IV - Special purpose motors as defined in EPCA.
Category V - Outside the scope of "electric motor" as defined in EPCA.

B. MECHANICAL MODIFICATIONS							
18	SPECIAL BALANCE	X					
19	BEARING TEMP. DETECTOR	X					
20	SPECIAL BASE/FEET					X	Does not meet definition of T-frame
21	SPECIAL CONDUIT BOX	X					
22	AUXILIARY CONDUIT BOX	X					
23	SPECIAL PAINT/COATING	X					
24	DRAINS	X					
25	DRIP COVER	X					
26	GROUND. LUG/HOLE	X					
27	SCREENS ON ODP ENCLOSURE	X					
28	MOUNTING F1,F2; W1-4; C1,2	X					Foot-mounting, rigid base, and resilient base.
C. BEARINGS							
29	BEARING CAPS	X					
30	ROLLER BEARINGS		X				Test with a standard bearing.
31	SHIELDED BEARINGS	X					
32	SEALED BEARINGS	X					Test with a standard bearing.
33	THRUST BEARINGS				X		Special mechanical construction.
34	CLAMPED BEARINGS	X					
35	SLEEVE BEARINGS				X		Special mechanical construction.
D. SPECIAL ENDSHIELDS							
36	C FACE	X					As defined in NEMA MG-1.
37	D FLANGE	X					As defined in NEMA MG-1.
38	CUSTOMER DEFINED				X		Special design for a particular application.
E. SEALS							
39	CONTACT SEALS	X					Includes lip seals and taconite seals - test with seals removed.
40	NON-CONTACT SEAL	X					Includes labyrinth and slinger seals - test with seals installed.

F. SHAFTS							
41	STANDARD SHAFTS/NEMA MG-1	X					Includes single and double, cylindrical, tapered, and short shafts.
42	NON STANDARD MATERIAL	X					
G. FANS							
43	SPECIAL MATERIAL	X					
44	QUIET DESIGN	X					
H. OTHER MOTORS							
45	WASHDOWN	X					Test with seals removed.
46	CLOSE- COUPLED PUMP			X			JM and JP frame assignments.
47	INTEGRAL GEAR MOTOR					X	Typically special mechanical design, and not a T-frame; motor and gearbox inseparable and operate as one system .
48	VERTICAL - NORMAL THRUST					X	EPCA covers foot-mounting.
49	SAW ARBOR				X		Special electrical/mechanical design.
50	TENV			X			Totally-enclosed non-ventilated not equipped for cooling (IP54, IC410).
51	TEAO			X			Totally-enclosed air-over requires airflow from external source (IP54, IC417).
52	FIRE PUMP	X					When safety certification is not required. See also EPCA §342(b)(1).
53	NON-CONTINUOUS					X	EPCA covers continuous ratings.
54	INTEGRAL BRAKE MOTOR				X		Integral brake design factory built within the motor.

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Subpart B—Test Procedures and Materials Incorporated

§ 431.21 Purpose and scope.

This subpart contains test procedures for electric motors, required to be prescribed by DOE pursuant to section 343 of EPCA, 42 U.S.C. 6314, and identifies materials incorporated by reference in this Part.

§ 431.22 Reference sources.

(a) *Materials incorporated by reference.*

(1) *General.* The following standards which are not otherwise set forth in this part 431 are incorporated by reference. The material listed in paragraph (a)(2) of this section has been approved for incorporation by reference by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Any subsequent amendment to a standard by the standard-setting organization will not affect the DOE test procedures unless and until amended by DOE. Material is incorporated as it exists on the date of the approval and a notice of any change in the material will be published in the **Federal Register**.

(2) *List of standards incorporated by reference.*

(i) The following provisions of National Electrical Manufacturers Association Standards Publication MG1–1993, *Motors and Generators,* with Revisions 1, 2, 3 and 4:

(A) Section I, *General Standards Applying to All Machines,* Part 1, *Referenced Standards and Definitions,* paragraphs 1.16.1, 1.16.1.1, 1.17.1.1, 1.17.1.2, and 1.40.1;

(B) Section I, *General Standards Applying to All Machines,* Part 4, *Dimensions, Tolerances, and Mounting,* paragraph 4.01 and Figures 4–1, 4–2, 4–3, and 4–4;

(C) Section II, *Small (Fractional) and Medium (Integral) Machines,* Part 11, *Dimensions-AC and DC Small and Medium Machines,* paragraphs 11.01.2, 11.31 (except the lines for frames 447T, 447TS, 449T and 449TS), 11.32, 11.34 (except the line for frames 447TC and 449TC, and the line for frames 447TSC and 449TSC), 11.35, and 11.36 (except the line for frames 447TD and 449TD, and the line for frames 447TSD and 449TSD), and Table 11–1;

(D) Section II, *Small (Fractional) and Medium (Integral) Machines,* Part 12, *Tests and Performance-AC and DC Motors,* paragraphs 12.35.1, 12.35.5, 12.38.1, 12.39.1, and 12.40.1, 12.58.1, and Tables 12–2 and 12–8; and

(E) Section II, *Small (Fractional) and Medium (Integral) Machines,* Part 14, *Application Data-AC and DC Small and Medium Machines,* paragraphs 14.02 and 14.03.

(ii) Institute of Electrical and Electronics Engineers, Inc., Standard 112–1996, *Test Procedure for Polyphase Induction Motors and Generators,* Test Method B, and the correction to the calculation at item (28) in section 10.2 Form B-Test Method B issued by IEEE on January 20, 1998. (Note: Paragraph 2 of Appendix A to Subpart B of Part 431 sets forth modifications to this Standard when it is used for purposes of Part 431 and EPCA.)

(iii) CSA International Standard C390–93, *Energy Efficiency Test Methods for Three-Phase Induction Motors,* Test Method (1).

(iv) International Electrotechnical Commission Standard 60034–1 (1996), *Rotating electrical machines,* Part 1: *Rating and performance,* with Amendment 1 (1997), Section 3: Duty, clause 3.2.1 and figure 1.

(v) International Electrotechnical Commission Standard 60050–411 (1996), *International Electrotechnical Vocabulary Chapter 411: Rotating machines,* sections 411–33–07 and 411–37–26.

(vi) International Electrotechnical Commission Standard 60072–1 (1991), *Dimensions and output series for rotating electrical machines—Part 1: Frame numbers 56 to 400 and flange numbers 55 to 1080,* clauses 2, 3, 4.1, 6.1, 7, and 10, and Tables 1, 2 and 4.

(vii) International Electrotechnical Commission Standard 60034–12 (1980), *Rotating electrical machines, Part 12: Starting performance of single-speed three-phase cage induction motors for voltages up to and including 660 V,* with Amendment 1 (1992) and Amendment 2 (1995), clauses 1, 2, 3.1, 4, 5, and 6, and Tables I, II, and III.

(3) *Inspection of standards.* The standards incorporated by reference are available for inspection at:

(i) Office of the Federal Register Information Center, 800 North Capitol Street, NW, Suite 700, Washington, DC;

(ii) U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Hearings and Dockets, ''Test Procedures, Labeling, and Certification Requirements for Electric Motors,'' Docket No. EE–RM–96–400, Forrestal Building, 1000 Independence Avenue, SW, Washington, DC.

(4) *Availability of standards.* Standards incorporated by reference may be obtained from the following sources:

(i) Copies of IEEE Standard 112–1996 can be obtained from the Institute of Electrical and Electronics Engineers, Inc., 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855–1331, 1–800–678–IEEE;

(ii) Copies of NEMA Standards Publication MG1–1993 with Revisions 1, 2, 3, and 4, and copies of International Electrotechnical Commission standards can be obtained from Global Engineering Documents, 15 Inverness Way East, Englewood, Colorado 80112–5776, 1–800–854–7179 (within the U.S.) or (303) 397–7956 (international).

(iii) Copies of CSA International Standard C390–93 can be obtained from CSA International, 178 Rexdale Boulevard, Etobicoke (Toronto), Ontario, Canada M9W 1R3, (416) 747–4044;

(b) *Reference Standards.*—(1) *General.* The standards listed in this paragraph are referred to in the DOE procedures for testing laboratories, and recognition of accreditation bodies and certification programs but are not incorporated by reference. These sources are given here for information and guidance.

(2) *List of References.*

(i) National Voluntary Laboratory Accreditation Program Handbooks 150, ''Procedures and General Requirements,'' March 1994, and 150–10, ''Efficiency of Electric Motors,'' August 1995. National Voluntary Laboratory Accreditation Program, National Institute of Standards and Technology, Gaithersburg, MD 20899.

(ii) ISO/IEC Guide 25, ''General requirements for the competence of calibration and testing laboratories.''

(iii) ISO Guide 27, ''Guidelines for corrective action to be taken by a certification body in the event of either misapplication of its mark of conformity to a product, or products which bear the mark of the certification body being found to subject persons or property to risk.''

(iv) ISO/IEC Guide 28, ''General rules for a model third-party certification system for products.''

(v) ISO/IEC Guide 58, ''Calibration and testing laboratory accreditation systems—General requirements for operation and recognition.''

(vi) ISO/IEC Guide 65, ''General requirements for bodies operating product certification systems.''

§ 431.23 Test procedures for the measurement of energy efficiency.

For purposes of 10 CFR Part 431 and EPCA, the test procedures for measuring the energy efficiency of an electric motor shall be the test procedures specified in appendix A to this subpart B.

§ 431.24 Determination of efficiency.

When a party determines the energy efficiency of an electric motor in order

to comply with an obligation imposed on it by or pursuant to Part C of Title III of EPCA, 42 U.S.C. 6311-6316, this section applies. This section does not apply to enforcement testing conducted pursuant to § 431.127.

(a) *Provisions applicable to all electric motors.*

(1) *General Requirements.* The average full load efficiency of each basic model of electric motor must be determined either by testing in accordance with § 431.23 of this subpart, or by application of an alternative efficiency determination method (AEDM) that meets the requirements of paragraphs (a)(2) and (3) of this section, provided, however, that an AEDM may be used to determine the average full load efficiency of one or more of a manufacturer's basic models only if the average full load efficiency of at least five of its other basic models is determined through testing.

(2) *Alternative efficiency determination method.* An AEDM applied to a basic model must be:

(i) Derived from a mathematical model that represents the mechanical and electrical characteristics of that basic model, and

(ii) Based on engineering or statistical analysis, computer simulation or modeling, or other analytic evaluation of performance data.

(3) *Substantiation of an alternative efficiency determination method.* Before an AEDM is used, its accuracy and reliability must be substantiated as follows:

(i) The AEDM must be applied to at least five basic models that have been tested in accordance with § 431.23 of this subpart, and

(ii) The predicted total power loss for each such basic model, calculated by applying the AEDM, must be within plus or minus ten percent of the mean total power loss determined from the testing of that basic model.

(4) *Subsequent verification of an AEDM.*

(i) Each manufacturer shall periodically select basic models representative of those to which it has applied an AEDM, and for each basic model selected shall either:

(A) Subject a sample of units to testing in accordance with §§ 431.23 and 431.24(b)(2) by an accredited laboratory that meets the requirements of § 431.25,

(B) Have a certification body recognized under § 431.27 certify its nominal full load efficiency, or

(C) Have an independent state-registered professional engineer, who is qualified to perform an evaluation of electric motor efficiency in a highly competent manner and who is not an employee of the manufacturer, review the manufacturer's representations and certify that the results of the AEDM accurately represent the total power loss and nominal full load efficiency of the basic model.

(ii) Each manufacturer that has used an AEDM under this section shall have available for inspection by the Department of Energy records showing: the method or methods used; 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; complete test data, product information, and related information that the manufacturer has generated or acquired pursuant to §§ 431.24(a)(3) and (a)(4)(i); and the calculations used to determine the average full load efficiency and total power losses of each basic model to which the AEDM was applied.

(iii) If requested by the Department, the manufacturer shall conduct simulations to predict the performance of particular basic models of electric motors specified by the Department, analyses of previous simulations conducted by the manufacturer, sample testing of basic models selected by the Department, or a combination of the foregoing.

(5) *Use of a certification program or accredited laboratory.*

(i) A manufacturer may have a certification program, that DOE has classified as nationally recognized under § 431.27, certify the nominal full load efficiency of a basic model of electric motor, and issue a certificate of conformity for the motor.

(ii) For each basic model for which a certification program is not used as described in paragraph (a)(5)(i) of this section, any testing of the motor pursuant to § 431.24(a)(1) through (3) to determine its energy efficiency must be carried out in accordance with § 431.24(b), in an accredited laboratory that meets the requirements of § 431.25. (This includes testing of the basic model, pursuant to § 431.24(a)(3)(i), to substantiate an AEDM.)

(b) *Additional testing requirements applicable when a certification program is not used.*

(1) *Selection of basic models for testing.*

(i) Basic models must be selected for testing in accordance with the following criteria:

(A) Two of the basic models must be among the five basic models with the highest unit volumes of production by the manufacturer in the prior year, or during the prior 12 calendar month period beginning in 1997,[1] whichever is later;

(B) The basic models should be of different horsepowers without duplication;

(C) The basic models should be of different frame number series without duplication; and

(D) Each basic model should be expected to have the lowest nominal full load efficiency among the basic models with the same rating (''rating'' as used here has the same meaning as it has in the definition of ''basic model'').

(ii) In any instance where it is impossible for a manufacturer to select basic models for testing in accordance with all of these criteria, the criteria shall be given priority in the order in which they are listed. Within the limits imposed by the criteria, basic models shall be selected randomly.

(2) *Selection of units for testing.* For each basic model selected for testing,[2] a sample of units shall be selected at random and tested. The sample shall be comprised of production units of the basic model, or units that are representative of such production units. The sample size shall be not fewer than five units, except that when fewer than five units of a basic model would be produced over a reasonable period of time (approximately 180 days), then each unit shall be tested. In a test of compliance with a represented average or nominal efficiency:

(i) The average full-load efficiency of the sample $\bar{X}$ which is defined by

$$\bar{X} = \frac{1}{n}\sum_{i=1}^{n} X_i,$$

where X_i is the measured full-load efficiency of unit i and n is the number of units tested, shall satisfy the condition:

$$\bar{X} \geq \frac{100}{1 + 1.05\left(\frac{100}{RE} - 1\right)}$$

where RE is the represented nominal full-load efficiency, and

(ii) The lowest full-load efficiency in the sample X_{min}, which is defined by

$$X_{min} = \min(X_i)$$

shall satisfy the condition

[1] In identifying these five basic models, any electric motor that does not comply with § 431.42, shall be excluded from consideration.

[2] Components of similar design may be substituted without requiring additional testing if the represented measures of energy consumption continue to satisfy the applicable sampling provision.

$$X_{min} \geq \frac{100}{1 + 1.15\left(\frac{100}{RE} - 1\right)}$$

(3) *Substantiation of an alternative efficiency determination method.* The basic models tested under § 431.24(a)(3)(i) must be selected for testing in accordance with paragraph (b)(1), and units of each such basic model must be tested in accordance with paragraph (b)(2) by an accredited laboratory that meets the requirements of § 431.25.

§ 431.25 Testing laboratories.

(a) Testing pursuant to § 431.24(a)(5)(ii) must be conducted in an accredited laboratory for which the accreditation body was:

(1) The National Institute of Standards and Technology/National Voluntary Laboratory Accreditation Program (NIST/NVLAP), or

(2) A laboratory accreditation body having a mutual recognition arrangement with NIST/NVLAP, or

(3) An organization classified by the Department, pursuant to section 431.26, as an accreditation body.

(b) NIST/NVLAP is under the auspices of the National Institute of Standards and Technology (NIST) which is part of the U.S. Department of Commerce. NIST/NVLAP accreditation is granted on the basis of conformance with criteria published in 15 CFR Part 285, *The National Voluntary Laboratory Accreditation Program Procedures and General Requirements.* NIST Handbook 150–10, August 1995, presents the technical requirements of the National Voluntary Laboratory Accreditation Program for the Efficiency of Electric Motors field of accreditation. This handbook supplements NIST Handbook 150, *National Voluntary Laboratory Accreditation Program Procedures and General Requirements,* which contains 15 CFR Part 285 of the U.S. Code of Federal Regulations plus all general NIST/NVLAP procedures, criteria, and policies. Changes in NIST/NVLAP's criteria, procedures, policies, standards or other bases for granting accreditation, occurring subsequent to the initial effective date of 10 CFR part 431 shall not apply to accreditation under this part unless approved in writing by the Department of Energy. Copies of NIST Handbooks 150 and 150–10 and information regarding NIST/NVLAP and its Efficiency of Electric Motors Program (EEM) can be obtained from NIST/NVLAP, 100 Bureau Drive, Mail Stop 2140, Gaithersburg, MD 20899–2140, telephone (301) 975–4016, or telefax (301) 926–2884.

§ 431.26 Department of Energy recognition of accreditation bodies.

(a) *Petition.* To be classified by the Department of Energy as an accreditation body, an organization must submit a petition to the Department requesting such classification, in accordance with paragraph (c) of this section and § 431.28 of this part. The petition must demonstrate that the organization meets the criteria in paragraph (b) of this section.

(b) *Evaluation criteria.* To be classified as an accreditation body by the Department, the organization must meet the following criteria:

(1) It must have satisfactory standards and procedures for conducting and administering an accreditation system and for granting accreditation. This must include provisions for periodic audits to verify that the laboratories receiving its accreditation continue to conform to the criteria by which they were initially accredited, and for withdrawal of accreditation where such conformance does not occur, including failure to provide accurate test results.

(2) It must be independent of electric motor manufacturers, importers, distributors, private labelers or vendors. It cannot be affiliated with, have financial ties with, be controlled by, or be under common control with any such entity.

(3) It must be qualified to perform the accrediting function in a highly competent manner.

(4) It must be expert in the content and application of the test procedures and methodologies in IEEE Standard 112–1996 Test Method B and CSA Standard C390–93 Test Method (1), or similar procedures and methodologies for determining the energy efficiency of electric motors.

(c) *Petition format.* Each petition requesting classification as an accreditation body must contain a narrative statement as to why the organization meets the criteria set forth in paragraph (b) of this section, must be signed on behalf of the organization by an authorized representative, and must be accompanied by documentation that supports the narrative statement. The following provides additional guidance:

(1) *Standards and procedures.* A copy of the organization's standards and procedures for operating an accreditation system and for granting accreditation should accompany the petition.

(2) *Independent status.* The petitioning organization should identify and describe any relationship, direct or indirect, that it has with an electric motor manufacturer, importer, distributor, private labeler, vendor, trade association or other such entity, as well as any other relationship it believes might appear to create a conflict of interest for it in performing as an accreditation body for electric motor testing laboratories. It should explain why it believes such relationship(s) would not compromise its independence as an accreditation body.

(3) *Qualifications to do accrediting.* Experience in accrediting should be discussed and substantiated by supporting documents. Of particular relevance would be documentary evidence that establishes experience in the application of guidelines contained in the ISO/IEC Guide 58, *Calibration and testing laboratory accreditation systems—General requirements for operation and recognition,* as well as experience in overseeing compliance with the guidelines contained in the ISO/IEC Guide 25, *General Requirements for the Competence of Calibration and Testing Laboratories.*

(4) *Expertise in electric motor test procedures.* The petition should set forth the organization's experience with the test procedures and methodologies in IEEE Standard 112–1996 Test Method B and CSA Standard C390–93 Test Method (1), and with similar procedures and methodologies. This part of the petition should include description of prior projects, qualifications of staff members, and the like. Of particular relevance would be documentary evidence that establishes experience in applying the guidelines contained in the ISO/IEC Guide 25, *General Requirements for the Competence of Calibration and Testing Laboratories,* to energy efficiency testing for electric motors.

(d) *Disposition.* The Department will evaluate the petition in accordance with section 431.28, and will determine whether the applicant meets the criteria in paragraph (b) of this section to be classified as an accrediting body.

§ 431.27 Department of Energy recognition of nationally recognized certification programs.

(a) *Petition.* For a certification program to be classified by the Department of Energy as being nationally recognized in the United States for the purposes of section 345 of EPCA (''nationally recognized''), the organization operating the program must submit a petition to the Department requesting such classification, in accordance with paragraph (c) of this section and section 431.28 of this part. The petition must demonstrate that the program meets the criteria in paragraph (b) of this section.

(b) *Evaluation criteria.* For a certification program to be classified by the Department as nationally recognized, it must meet the following criteria:

(1) It must have satisfactory standards and procedures for conducting and administering a certification system, including periodic follow up activities to assure that basic models of electric motor continue to conform to the efficiency levels for which they were certified, and for granting a certificate of conformity.

(2) It must be independent of electric motor manufacturers, importers, distributors, private labelers or vendors. It cannot be affiliated with, have financial ties with, be controlled by, or be under common control with any such entity.

(3) It must be qualified to operate a certification system in a highly competent manner.

(4) It must be expert in the content and application of the test procedures and methodologies in IEEE Standard 112–1996 Test Method B and CSA Standard C390–93 Test Method (1), or similar procedures and methodologies for determining the energy efficiency of electric motors. It must have satisfactory criteria and procedures for the selection and sampling of electric motors tested for energy efficiency.

(c) *Petition format.* Each petition requesting classification as a nationally recognized certification program must contain a narrative statement as to why the program meets the criteria listed in paragraph (b) of this section, must be signed on behalf of the organization operating the program by an authorized representative, and must be accompanied by documentation that supports the narrative statement. The following provides additional guidance as to the specific criteria:

(1) *Standards and procedures.* A copy of the standards and procedures for operating a certification system and for granting a certificate of conformity should accompany the petition.

(2) *Independent status.* The petitioning organization should identify and describe any relationship, direct or indirect, that it or the certification program has with an electric motor manufacturer, importer, distributor, private labeler, vendor, trade association or other such entity, as well as any other relationship it believes might appear to create a conflict of interest for the certification program in operating a certification system for compliance by electric motors with energy efficiency standards. It should explain why it believes such relationship would not compromise its independence in operating a certification program.

(3) *Qualifications to operate a certification system.* Experience in operating a certification system should be discussed and substantiated by supporting documents. Of particular relevance would be documentary evidence that establishes experience in the application of guidelines contained in the ISO/IEC Guide 65, *General requirements for bodies operating product certification systems,* ISO/IEC Guide 27, *Guidelines for corrective action to be taken by a certification body in the event of either misapplication of its mark of conformity to a product, or products which bear the mark of the certification body being found to subject persons or property to risk,* and ISO/IEC Guide 28, *General rules for a model third-party certification system for products,* as well as experience in overseeing compliance with the guidelines contained in the ISO/IEC Guide 25, *General requirements for the competence of calibration and testing laboratories.*

(4) *Expertise in electric motor test procedures.* The petition should set forth the program's experience with the test procedures and methodologies in IEEE Standard 112–1996 Test Method B and CSA Standard C390–93 Test Method (1), and with similar procedures and methodologies. This part of the petition should include description of prior projects, qualifications of staff members, and the like. Of particular relevance would be documentary evidence that establishes experience in applying guidelines contained in the ISO/IEC Guide 25, *General requirements for the competence of calibration and testing laboratories,* to energy efficiency testing for electric motors.

(d) *Disposition.* The Department will evaluate the petition in accordance with § 431.28, and will determine whether the applicant meets the criteria in paragraph (b) of this section for classification as a nationally recognized certification program.

§ 431.28 Procedures for recognition and withdrawal of recognition of accreditation bodies and certification programs.

(a) *Filing of petition.* Any petition submitted to the Department pursuant to § 431.26(a) or 431.27(a) of this part, shall be entitled ''Petition for Recognition'' (''Petition'') and must be submitted, in triplicate to the Assistant Secretary for Energy Efficiency and Renewable Energy, United States Department of Energy, 1000 Independence Avenue, SW, Washington, DC 20585. In accordance with the provisions set forth in 10 CFR 1004.11, any request for confidential treatment of any information contained in such a Petition or in supporting documentation must be accompanied by a copy of the Petition or supporting documentation from which the information claimed to be confidential has been deleted.

(b) *Public notice and solicitation of comments.* DOE shall publish in the **Federal Register** the Petition from which confidential information, as determined by DOE, has been deleted in accordance with 10 CFR 1004.11 and shall solicit comments, data and information on whether the Petition should be granted. The Department shall also make available for inspection and copying the Petition's supporting documentation from which confidential information, as determined by DOE, has been deleted in accordance with 10 CFR 1004.11. Any person submitting written comments to DOE with respect to a Petition shall also send a copy of such comments to the petitioner.

(c) *Responsive statement by the petitioner.* A petitioner may, within 10 working days of receipt of a copy of any comments submitted in accordance with paragraph (b) of this section, respond to such comments in a written statement submitted to the Assistant Secretary for Energy Efficiency and Renewable Energy. A petitioner may address more than one set of comments in a single responsive statement.

(d) *Public announcement of interim determination and solicitation of comments.* The Assistant Secretary for Energy Efficiency and Renewable Energy shall issue an interim determination on the Petition as soon as is practicable following receipt and review of the Petition and other applicable documents, including, but not limited to, comments and responses to comments. The petitioner shall be notified in writing of the interim determination. DOE shall also publish in the **Federal Register** the interim determination and shall solicit comments, data and information with respect to that interim determination. Written comments and responsive statements may be submitted as provided in paragraphs (b) and (c) of this section.

(e) *Public announcement of final determination.* The Assistant Secretary for Energy Efficiency and Renewable Energy shall as soon as practicable, following receipt and review of comments and responsive statements on the interim determination, publish in the **Federal Register** a notice of final determination on the Petition.

(f) *Additional information.* The Department may, at any time during the

recognition process, request additional relevant information or conduct an investigation concerning the Petition. The Department's determination on a Petition may be based solely on the Petition and supporting documents, or may also be based on such additional information as the Department deems appropriate.

(g) *Withdrawal of recognition.*

(1) *Withdrawal by the Department.* If the Department believes that an accreditation body or certification program that has been recognized under § 431.26 or 431.27, respectively, is failing to meet the criteria of paragraph (b) of the section under which it is recognized, the Department will so advise such entity and request that it take appropriate corrective action. The Department will give the entity an opportunity to respond. If after receiving such response, or no response, the Department believes satisfactory correction has not been made, the Department will withdraw its recognition from that entity.

(2) *Voluntary withdrawal.* An accreditation body or certification program may withdraw itself from recognition by the Department by advising the Department in writing of such withdrawal. It must also advise those that use it (for an accreditation body, the testing laboratories, and for a certification organization, the manufacturers) of such withdrawal.

(3) *Notice of withdrawal of recognition.* The Department will publish in the **Federal Register** a notice of any withdrawal of recognition that occurs pursuant to this paragraph (g).

§ 431.29 Petitions for waiver, and applications for interim waiver, of test procedure.

(a) *General criteria.*

(1) Any interested person may submit a petition to waive for a particular basic model any requirements of § 431.23 of this subpart, upon the grounds that either the basic model contains one or more design characteristics which either prevent testing of the basic model according to the prescribed test procedures, or the prescribed test procedures may evaluate the basic model in a manner so unrepresentative of its true energy consumption characteristics as to provide materially inaccurate comparative data.

(2) Any interested person who has submitted a Petition for Waiver as provided in this subpart may also file an Application for Interim Waiver of the applicable test procedure requirements.

(b) *Submission, content, and publication.*

(1) A Petition for Waiver must be submitted, in triplicate, to the Assistant Secretary for Energy Efficiency and Renewable Energy, United States Department of Energy. Each Petition for Waiver shall:

(i) Identify the particular basic model(s) for which a waiver is requested, the design characteristic(s) constituting the grounds for the petition, and the specific requirements sought to be waived and shall discuss in detail the need for the requested waiver;

(ii) Identify manufacturers of all other basic models marketed in the United States and known to the petitioner to incorporate similar design characteristic(s);

(iii) Include any alternate test procedures known to the petitioner to evaluate in a manner representative of the energy consumption characteristics of the basic model; and

(iv) Be signed by the petitioner or by an authorized representative. In accordance with the provisions set forth in 10 CFR 1004.11, any request for confidential treatment of any information contained in a Petition for Waiver or in supporting documentation must be accompanied by a copy of the petition, application or supporting documentation from which the information claimed to be confidential has been deleted. DOE shall publish in the **Federal Register** the petition and supporting documents from which confidential information, as determined by DOE, has been deleted in accordance with 10 CFR 1004.11 and shall solicit comments, data and information with respect to the determination of the petition.

(2) An Application for Interim Waiver must be submitted in triplicate, with the required three copies of the Petition for Waiver, to the Assistant Secretary for Energy Efficiency and Renewable Energy, U.S. Department of Energy. Each Application for Interim Waiver shall reference the Petition for Waiver by identifying the particular basic model(s) for which a waiver and temporary exception are being sought. Each Application for Interim Waiver shall demonstrate likely success of the Petition for Waiver and shall address what economic hardship and/or competitive disadvantage is likely to result absent a favorable determination on the Application for Interim Waiver. Each Application for Interim Waiver shall be signed by the applicant or by an authorized representative.

(c) *Notification to other manufacturers.*

(1) Each petitioner, after filing a Petition for Waiver with DOE, and after the Petition for Waiver has been published in the **Federal Register**, must, within five working days of such publication, notify in writing all known manufacturers of domestically marketed units of the same product type (as listed in section 340(1) of the Act) and must include in the notice a statement that DOE has published in the **Federal Register** on a certain date the Petition for Waiver and supporting documents from which confidential information, if any, as determined by DOE, has been deleted in accordance with 10 CFR 1004.11. Each petitioner, in complying with the requirements of this paragraph, must file with DOE a statement certifying the names and addresses of each person to whom a notice of the Petition for Waiver has been sent.

(2) Each applicant for Interim Waiver, whether filing jointly with, or subsequent to, a Petition for Waiver with DOE, must concurrently notify in writing all known manufacturers of domestically marketed units of the same product type (as listed in Section 340(1) of the Act) and must include in the notice a copy of the Petition for Waiver and a copy of the Application for Interim Waiver. In complying with this section, each applicant must in the written notification include a statement that the Assistant Secretary for Energy Efficiency and Renewable Energy will receive and consider timely written comments on the Application for Interim Waiver. Each applicant, upon filing an Application for Interim Waiver, must in complying with the requirements of this paragraph certify to DOE that a copy of these documents have been sent to all known manufacturers of domestically marked units of the same product type (as listed in section 340(1) of the Act). Such certification must include the names and addresses of such persons. Each applicant also must comply with the provisions of paragraph (c)(1) of this section with respect to the petition for waiver.

(d) *Comments; responses to comments.*

(1) Any person submitting written comments to DOE with respect to an Application for Interim Waiver must also send a copy of the comments to the applicant.

(2) Any person submitting written comments to DOE with the respect to a Petition for Waiver must also send a copy of such comments to the petitioner. In accordance with subparagraph (b)(1) of this section, a petitioner may submit a rebuttal statement to the Assistant Secretary for Energy Efficiency and Renewable Energy.

(e) *Provisions specific to interim waivers.*

(1) *Disposition of application.* If administratively feasible, applicant will be notified in writing of the disposition of the Application for Interim Waiver within 15 business days of receipt of the application. Notice of DOE's determination on the Application for Interim Waiver must be published in the **Federal Register**.

(2) *Consequences of filing application.* The filing of an Application for Interim Waiver shall not constitute grounds for noncompliance with any requirements of this subpart, until an Interim Waiver has been granted.

(3) *Criteria for granting.* An Interim Waiver from test procedure requirements will be granted by the Assistant Secretary for Energy Efficiency and Renewable Energy if it is determined that the applicant will experience economic hardship if the Application for Interim Waiver is denied, if it appears likely that the Petition for Waiver will be granted, and/or the Assistant Secretary determines that it would be desirable for public policy reasons to grant immediate relief pending a determination on the Petition for Waiver.

(4) *Duration.* An interim waiver will terminate 180 days after issuance or upon the determination on the Petition for Waiver, whichever occurs first. An interim waiver may be extended by DOE for 180 days. Notice of such extension and/or any modification of the terms or duration of the interim waiver shall be published in the **Federal Register**, and shall be based on relevant information contained in the record and any comments received subsequent to issuance of the interim waiver.

(f) *Provisions specific to waivers.*—(1) *Rebuttal by petitioner.* Following publication of the Petition for Waiver in the **Federal Register**, a petitioner may, within 10 working days of receipt of a copy of any comments submitted in accordance with paragraph (b)(1) of this section, submit a rebuttal statement to the Assistant Secretary for Energy Efficiency and Renewable Energy. A petitioner may rebut more than one response in a single rebuttal statement.

(2) *Disposition of petition.* The petitioner will be notified in writing as soon as practicable of the disposition of each Petition for Waiver. The Assistant Secretary for Energy Efficiency and Renewable Energy will issue a decision on the petition as soon as is practicable following receipt and review of the Petition for Waiver and other applicable documents, including, but not limited to, comments and rebuttal statements.

(3) *Consequence of filing petition.* The filing of a Petition for Waiver will not constitute grounds for noncompliance with any requirements of this subpart, until a waiver or interim waiver has been granted.

(4) *Granting of waivers: criteria, conditions, and publication.* Waivers will be granted by the Assistant Secretary for Energy Efficiency and Renewable Energy, if it is determined that the basic model for which the waiver was requested contains a design characteristic which either prevents testing of the basic model according to the prescribed test procedures, or the prescribed test procedures may evaluate the basic model in a manner so unrepresentative of its true energy consumption characteristics as to provide materially inaccurate comparative data. Waivers may be granted subject to conditions, which may include adherence to alternate test procedures specified by the Assistant Secretary for Energy Efficiency and Renewable Energy. The Assistant Secretary will promptly publish in the **Federal Register** notice of each waiver granted or denied, and any limiting conditions of each waiver granted.

(g) *Revision of regulation.* Within one year of the granting of any waiver, the Department of Energy 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. As soon thereafter as practicable, the Department of Energy will publish in the **Federal Register** a final rule. Such waiver will terminate on the effective date of such final rule.

(h) *Exhaustion of remedies.* In order to exhaust administrative remedies, any person aggrieved by an action under this section must file an appeal with the DOE's Office of Hearings and Appeals as provided in 10 CFR Part 1003, subpart C.

Appendix A to Subpart B of Part 431—Uniform Test Method for Measuring Nominal Full Load Efficiency of Electric Motors

1. *Definitions.*

Definitions contained in section 431.2 are applicable to this appendix.

2. *Test procedures.*

Efficiency and losses shall be determined in accordance with NEMA MG1–1993 with Revisions 1 through 4, paragraph 12.58.1, ''Determination of Motor Efficiency and Losses,'' and either

(1) CSA International (or Canadian Standards Association) Standard C390–93 Test Method (1), *Input-Output Method with Indirect Measurement of the Stray-Load Loss and Direct Measurement of the Stator Winding* (I^2R), *Rotor Winding* (I^2R), *Core and Windage-Friction Losses,* or

(2) IEEE Standard 112–1996 Test Method B, *Input-Output with Loss Segregation,* with IEEE correction notice of January 20, 1998, except as follows:

(i) Page 8, subclause 5.1.1, *Specified temperature,* the introductory clause does not apply. Instead the following applies:

The specified temperature used in making resistance corrections should be determined by one of the following (Test Method B only allows the use of preference a) or b).), which are listed in order of preference.

(ii) Page 17, subclause 6.4.1.3, *No-load test,* the text does not apply. Instead, the following applies:

See 5.3 including 5.3.3, the separation of core loss from friction and windage loss. Prior to making this test, the machine shall be operated at no-load until the input has stabilized.

(iii) Page 40, subclause 8.6.3, *Termination of test,* the third sentence does not apply. Instead, the following applies:

For continuous rated machines, the temperature test shall continue until there is 1°C or less change in temperature rise over a 30-minute time period.

(iv) Page 47, at the top of 10.2 Form B, immediately after the line that reads ''Rated Load Heat Run Stator Winding Resistance Between Terminals,'' the following additional line applies:

Temperature for Resistance Correction (t_s) =_____ °C (See 6.4.3.2).

(v) Page 47, at the bottom of 10.2 Form B, after the first sentence to footnote t_t, the following additional sentence applies:

The values for t_s and t_t shall be based on the same method of temperature measurement, selected from the four methods in subclause 8.3.

(vi) Page 47, at the bottom of 10.2 Form B, below the footnotes and above ''Summary of Characteristics,'' the following additional note applies:

Note: The temperature for resistance correction (t_s) is equal to [(4) − (5) + 25°C].

(vii) Page 48, item (22), the torque constants ''k = 9.549 for torque, in N•m'' and ''k = 7.043 for torque, in lbf•ft'' do not apply. Instead, the following applies:

''k_2 = 9.549 for torque, in N•m'' and ''k_2 = 7.043 for torque, in lbf•ft.''

(viii) Page 48, at the end of item (27), the following additional reference applies:

''See 6.4.3.2''.

(ix) Page 48, item (29), ''See 4.3.2.2, Eq. 4,'' does not apply. Instead the following applies:

Is equal to (10) • [k_1 + (4) − (5) + 25°C] / [k_1 + (7)], see 6.4.3.3''.

3. *Amendments to test procedures.*

Any revision to IEEE Std 112–1996 Test Method B with correction notice of January 20, 1998, to NEMA Standards Publication MG1–1993 with Revisions 1 through 4, or to CSA Standard C390–93 Test Method (1), subsequent to promulgation of this appendix A, shall not be effective for purposes of test procedures required under part 431 and this appendix A, unless and until part 431 and this appendix A are amended.

Subpart C—Energy Conservation Standards

§ 431.41 Purpose and scope.

This subpart contains energy conservation standards for certain types of covered equipment pursuant to Part C–Certain Industrial Equipment, Energy Policy and Conservation Act, as amended (42 U.S.C. 6211 *et seq.*).

§ 431.42 Energy conservation standards and effective dates.

(a) Each electric motor manufactured (alone or as a component of another piece of equipment) after October 24, 1997, or in the case of an electric motor which requires listing or certification by a nationally recognized safety testing laboratory, after October 24, 1999, shall have a nominal full load efficiency of not less than the following:

Number of poles	Nominal Full Load Efficiency					
	Open Motors			Enclosed Motors		
	6	4	2	6	4	2
Motor Horsepower/Standard Kilowatt Equivalent						
1/.75	80.0	82.5	.....	80.0	82.5	75.5
1.5/1.1	84.0	84.0	82.5	85.5	84.0	82.5
2/1.5	85.5	84.0	84.0	86.5	84.0	84.0
3/2.2	86.5	86.5	84.0	87.5	87.5	85.5
5/3.7	87.5	87.5	85.5	87.5	87.5	87.5
7.5/5.5	88.5	88.5	87.5	89.5	89.5	88.5
10/7.5	90.2	89.5	88.5	89.5	89.5	89.5
15/11	90.2	91.0	89.5	90.2	91.0	90.2
20/15	91.0	91.0	90.2	90.2	91.0	90.2
25/18.5	91.7	91.7	91.0	91.7	92.4	91.0
30/22	92.4	92.4	91.0	91.7	92.4	91.0
40/30	93.0	93.0	91.7	93.0	93.0	91.7
50/37	93.0	93.0	92.4	93.0	93.0	92.4
60/45	93.6	93.6	93.0	93.6	93.6	93.0
75/55	93.6	94.1	93.0	93.6	94.1	93.0
100/75	94.1	94.1	93.0	94.1	94.5	93.6
125/90	94.1	94.5	93.6	94.1	94.5	94.5
150/110	94.5	95.0	93.6	95.0	95.0	94.5
200/150	94.5	95.0	94.5	95.0	95.0	95.0

(b) For purposes of determining the required minimum nominal full load efficiency of an electric motor that has a horsepower or kilowatt rating between two horsepowers or kilowattages listed consecutively in paragraph (a) of this section, each such motor shall be deemed to have a horsepower or kilowatt rating that is listed in paragraph (a). The rating that the motor is deemed to have shall be determined as follows:

(1) A horsepower at or above the midpoint between the two consecutive horsepowers shall be rounded up to the higher of the two horsepowers;

(2) A horsepower below the midpoint between the two consecutive horsepowers shall be rounded down to the lower of the two horsepowers, or

(3) A kilowatt rating shall be directly converted from kilowatts to horsepower using the formula, 1 kilowatt = (1/0.746) horsepower, without calculating beyond three significant decimal places, and the resulting horsepower shall be rounded in accordance with subparagraph (b)(1) or (b)(2) of this section, whichever applies.

(c) This section does not apply to definite purpose motors, special purpose motors, and those motors exempted by the Secretary.

§ 431.43 Preemption of state regulations.

Any state regulation providing for any energy conservation standard, or other requirement with respect to the energy efficiency or energy use, of an electric motor that is not identical to a Federal standard in effect under this subpart is preempted by that standard, except as provided for in sections 345(a) and 327(b) and (c) of the Act.

Subpart D—Petitions To Exempt State Regulation From Preemption; Petitions To Withdraw Exemption of State Regulation

§ 431.61 Purpose and scope.

(a) The regulations in this subpart prescribe the procedures to be followed in connection with petitions requesting a rule that a State regulation prescribing an energy conservation standard or other requirement respecting energy use or energy efficiency of a type (or class) of covered equipment not be preempted.

(b) The regulations in this subpart also prescribe the procedures to be followed in connection with petitions to withdraw a rule exempting a State regulation prescribing an energy conservation standard or other requirement respecting energy use or energy efficiency of a type (or class) of covered equipment.

§ 431.62 Prescriptions of a rule.

(a) *Criteria for exemption from preemption.* Upon petition by a State which has prescribed an energy conservation standard or other requirement for a type or class of covered equipment for which a Federal energy conservation standard is applicable, the Secretary shall prescribe a rule that such standard not be preempted if he/she determines that the State has established by a preponderance of evidence that such requirement is needed to meet unusual

and compelling State or local energy interests. For the purposes of this regulation, the term ''unusual and compelling State or local energy interests'' means interests which are substantially different in nature or magnitude from those prevailing in the U.S. generally, and are such that when evaluated within the context of the State's energy plan and forecast, the costs, benefits, burdens, and reliability of energy savings resulting from the State regulation make such regulation preferable or necessary when measured against the costs, benefits, burdens, and reliability of alternative approaches to energy savings or production, including reliance on reasonably predictable market-induced improvements in efficiency of all equipment subject to the State regulation. The Secretary may not prescribe such a rule if he finds that interested persons have established, by a preponderance of the evidence, that the State's regulation will significantly burden manufacturing, marketing, distribution, sale or servicing of the covered equipment on a national basis. In determining whether to make such a finding, the Secretary shall evaluate all relevant factors including: The extent to which the State regulation will increase manufacturing or distribution costs of manufacturers, distributors, and others; the extent to which the State regulation will disadvantage smaller manufacturers, distributors, or dealers or lessen competition in the sale of the covered equipment in the State; the extent to which the State regulation would cause a burden to manufacturers to redesign and produce the covered equipment type (or class), taking into consideration the extent to which the regulation would result in a reduction in the current models, or in the projected availability of models, that could be shipped on the effective date of the regulation to the State and within the U.S., or in the current or projected sales volume of the covered equipment type (or class) in the State and the U.S.; and the extent to which the State regulation is likely to contribute significantly to a proliferation of State commercial and industrial equipment efficiency requirements and the cumulative impact such requirements would have. The Secretary may not prescribe such a rule if he/she finds that such a rule will result in the unavailability in the State of any covered equipment (or class) of performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as those generally available in the State at the time of the Secretary's finding. The failure of some classes (or types) to meet this criterion shall not affect the Secretary's determination of whether to prescribe a rule for other classes (or types).

(1) Requirements of petition for exemption from preemption. A petition from a State for a rule for exemption from preemption shall include the information listed in paragraphs (a)(1)(i) through (a)(1)(vi) of this section. A petition for a rule and correspondence relating to such petition shall be available for public review except for confidential or proprietary information submitted in accordance with the Department of Energy's Freedom of Information Regulations set forth in 10 CFR Part 1004.

(i) The name, address, and telephone number of the petitioner;

(ii) A copy of the State standard for which a rule exempting such standard is sought;

(iii) A copy of the State's energy plan and forecast;

(iv) Specification of each type or class of covered product for which a rule exempting a standard is sought;

(v) Other information, if any, believed to be pertinent by the petitioner; and

(vi) Such other information as the Secretary may require.

(b) *Criteria for exemption from preemption when energy emergency conditions exist within State.* Upon petition by a State which has prescribed an energy conservation standard or other requirement for a type or class of covered equipment for which a Federal energy conservation standard is applicable, the Secretary may prescribe a rule, effective upon publication in the **Federal Register**, that such regulation not be preempted if he determines that in addition to meeting the requirements of paragraph (a) of this section the State has established that: an energy emergency condition exists within the State that imperils the health, safety, and welfare of its residents because of the inability of the State or utilities within the State to provide adequate quantities of gas or electric energy to its residents at less than prohibitive costs; and cannot be substantially alleviated by the importation of energy or the use of interconnection agreements; and the State regulation is necessary to alleviate substantially such condition.

(1) Requirements of petition for exemption from preemption when energy emergency conditions exist within a State. A petition from a State for a rule for exemption from preemption when energy emergency conditions exist within a State shall include the information listed in paragraphs (a)(1)(i) through (a)(1)(vi) of this section. A petition shall also include the information prescribed in paragraphs (b)(1)(i) through (b)(1)(iv) of this section, and shall be available for public review except for confidential or proprietary information submitted in accordance with the Department of Energy's Freedom of Information Regulations set forth in 10 CFR Part 1004:

(i) A description of the energy emergency condition which exists within the State, including causes and impacts.

(ii) A description of emergency response actions taken by the State and utilities within the State to alleviate the emergency condition;

(iii) An analysis of why the emergency condition cannot be alleviated substantially by importation of energy or the use of interconnection agreements;

(iv) An analysis of how the State standard can alleviate substantially such emergency condition.

(c) *Criteria for withdrawal of a rule exempting a State standard.* Any person subject to a State standard which, by rule, has been exempted from Federal preemption and which prescribes an energy conservation standard or other requirement for a type or class of covered equipment, when the Federal energy conservation standard for such product subsequently is amended, may petition the Secretary requesting that the exemption rule be withdrawn. The Secretary shall consider such petition in accordance with the requirements of paragraph (a) of this section, except that the burden shall be on the petitioner to demonstrate that the exemption rule received by the State should be withdrawn as a result of the amendment to the Federal standard. The Secretary shall withdraw such rule if he determines that the petitioner has shown the rule should be withdrawn.

(1) Requirements of petition to withdraw a rule exempting a State standard. A petition for a rule to withdraw a rule exempting a State standard shall include the information prescribed in paragraphs (c)(1)(i) through (c)(1)(vii) of this section, and shall be available for public review, except for confidential or proprietary information submitted in accordance with the Department of Energy's Freedom of Information Regulations set forth in 10 CFR Part 1004:

(i) The name, address and telephone number of the petitioner;

(ii) A statement of the interest of the petitioner for which a rule withdrawing an exemption is sought;

(iii) A copy of the State standard for which a rule withdrawing an exemption is sought;

(iv) Specification of each type or class of covered equipment for which a rule withdrawing an exemption is sought;

(v) A discussion of the factors contained in paragraph (a) of this section;

(vi) Such other information, if any, believed to be pertinent by the petitioner; and

(vii) Such other information as the Secretary may require.

§ 431.63 Filing requirements.

(a) *Service.* All documents required to be served under this subpart shall, if mailed, be served by first class mail. Service upon a person's duly authorized representative shall constitute service upon that person.

(b) *Obligation to supply information.* A person or State submitting a petition is under a continuing obligation to provide any new or newly discovered information relevant to that petition. Such information includes, but is not limited to, information regarding any other petition or request for action subsequently submitted by that person or State.

(c) *The same or related matters.* A person or State submitting a petition or other request for action shall state whether to the best knowledge of that petitioner the same or related issue, act, or transaction has been or presently is being considered or investigated by any State agency, department, or instrumentality.

(d) *Computation of time.*

(1) Computing any period of time prescribed by or allowed under this subpart, the day of the action from which the designated period of time begins to run is not to be included. If the last day of the period is Saturday, or Sunday, or Federal legal holiday, the period runs until the end of the next day that is neither a Saturday, or Sunday or Federal legal holiday.

(2) Saturdays, Sundays, and intervening Federal legal holidays shall be excluded from the computation of time when the period of time allowed or prescribed is 7 days or less.

(3) When a submission is required to be made within a prescribed time, DOE may grant an extension of time upon good cause shown.

(4) Documents received after regular business hours are deemed to have been submitted on the next regular business day. Regular business hours for the DOE's National Office, Washington, DC, are 8:30 a.m. to 4:30 p.m.

(5) DOE reserves the right to refuse to accept, and not to consider, untimely submissions.

(e) *Filing of petitions.*

(1) A petition for a rule shall be submitted in triplicate to: The Assistant Secretary for Energy Efficiency and Renewable Energy, U.S. Department of Energy, Section 327 Petitions, Appliance Efficiency Standards, Forrestal Building, 1000 Independence Avenue, SW., Washington, DC 20585.

(2) A petition may be submitted on behalf of more than one person. A joint petition shall indicate each person participating in the submission. A joint petition shall provide the information required by § 431.62 for each person on whose behalf the petition is submitted.

(3) All petitions shall be signed by the person(s) submitting the petition or by a duly authorized representative. If submitted by a duly authorized representative, the petition shall certify this authorization.

(4) A petition for a rule to withdraw a rule exempting a State regulation, all supporting documents, and all future submissions shall be served on each State agency, department, or instrumentality whose regulation the petitioner seeks to supersede. The petition shall contain a certification of this service which states the name and mailing address of the served parties, and the date of service.

(f) *Acceptance for filing.*

(1) Within fifteen (15) days of the receipt of a petition, the Secretary will either accept it for filing or reject it, and the petitioner will be so notified in writing. The Secretary will serve a copy of this notification on each other party served by the petitioner. Only such petitions which conform to the requirements of this subpart and which contain sufficient information for the purposes of a substantive decision will be accepted for filing. Petitions which do not so conform will be rejected and an explanation provided to petitioner in writing.

(2) For purposes of the Act and this subpart, a petition is deemed to be filed on the date it is accepted for filing.

(g) *Docket.* A petition accepted for filing will be assigned an appropriate docket designation. Petitioner shall use the docket designation in all subsequent submissions.

§ 431.64 Notice of petition.

(a) Promptly after receipt of a petition and its acceptance for filing, notice of such petition shall be published in the **Federal Register**. The notice shall set forth the availability for public review of all data and information available, and shall solicit comments, data and information with respect to the determination on the petition. Except as may otherwise be specified, the period for public comment shall be 60 days after the notice appears in the **Federal Register**.

(b) In addition to the material required under paragraph (a) of this section, each notice shall contain a summary of the State regulation at issue and the petitioner's reasons for the rule sought.

§ 431.65 Consolidation.

DOE may consolidate any or all matters at issue in two or more proceedings docketed where there exist common parties, common questions of fact and law, and where such consolidation would expedite or simplify consideration of the issues. Consolidation shall not affect the right of any party to raise issues that could have been raised if consolidation had not occurred.

§ 431.66 Hearing.

The Secretary may hold a public hearing, and publish notice in the **Federal Register** of the date and location of the hearing, when he determines that such a hearing is necessary and likely to result in a timely and effective resolution of the issues. A transcript shall be kept of any such hearing.

§ 431.67 Disposition of petitions.

(a) After the submission of public comments under Sec. 431.63(a), the Secretary shall prescribe a final rule or deny the petition within 6 months after the date the petition is filed.

(b) The final rule issued by the Secretary or a determination by the Secretary to deny the petition shall include a written statement setting forth his findings and conclusions, and the reasons and basis therefor. A copy of the Secretary's decision shall be sent to the petitioner and the affected State agency. The Secretary shall publish in the **Federal Register** a notice of the final rule granting or denying the petition and the reasons and basis therefor.

(c) If the Secretary finds that he cannot issue a final rule within the 6-month period pursuant to paragraph (a) of this section, he shall publish a notice in the **Federal Register** extending such period to a date certain, but no longer than one year after the date on which the petition was filed. Such notice shall include the reasons for the delay.

§ 431.68 Effective dates of final rules.

(a) A final rule exempting a State standard from Federal preemption will be effective:

(1) Upon publication in the **Federal Register** if the Secretary determines that such rule is needed to meet an ''energy emergency condition'' within the State.

(2) Three years after such rule is published in the **Federal Register**; or

(3) Five years after such rule is published in the **Federal Register** if the Secretary determines that such additional time is necessary due to the burdens of retooling, redesign or distribution.

(b) A final rule withdrawing a rule exempting a State standard will be effective upon publication in the **Federal Register**.

§ 431.69 Request for reconsideration.

(a) Any petitioner whose petition for a rule has been denied may request reconsideration within 30 days of denial. The request shall contain a statement of facts and reasons supporting reconsideration and shall be submitted in writing to the Secretary.

(b) The denial of a petition will be reconsidered only where it is alleged and demonstrated that the denial was based on error in law or fact and that evidence of the error is found in the record of the proceedings.

(c) If the Secretary fails to take action on the request for reconsideration within 30 days, the request is deemed denied, and the petitioner may seek such judicial review as may be appropriate and available.

(d) A petitioner has not exhausted other administrative remedies until a request for reconsideration has been filed and acted upon or deemed denied.

§ 431.70 Finality of decision.

(a) A decision to prescribe a rule that a State energy conservation standard or other requirement not be preempted is final on the date the rule is issued, i.e., signed by the Secretary. A decision to prescribe such a rule has no effect on other regulations of a covered product of any other State.

(b) A decision to prescribe a rule withdrawing a rule exempting a State standard or other requirement is final on the date the rule is issued, i.e., signed by the Secretary. A decision to deny such a petition is final on the day a denial of a request for reconsideration is issued, i.e., signed by the Secretary.

Subpart E—Labeling

§ 431.81 Purpose and scope.

This subpart establishes labeling rules for electric motors pursuant to section 344 of EPCA, 42 U.S.C. 6315. It addresses labeling and marking the equipment with information indicating its energy efficiency and compliance with applicable standards under section 342 of EPCA, 42 U.S.C. 6313, and the inclusion of such information in other material used to market the equipment. This subpart applies only to electric motors manufactured after [ONE YEAR AFTER PUBLICATION OF THIS RULE IN THE **Federal Register**].

§ 431.82 Labeling requirements.

(a) *Electric motor nameplate.*

(1) *Required information.* The permanent nameplate of an electric motor for which standards are prescribed in § 431.42 must be marked clearly with the following information:

(i) The motor's nominal full load efficiency (as of the date of manufacture), derived from the motor's average full load efficiency as determined pursuant to subpart B of this Part; and

(ii) A Compliance Certification number (''CC number'') supplied by DOE to the manufacturer or private labeler, pursuant to section 431.123(e), and applicable to that motor. Such CC number must be on the nameplate of a motor beginning 90 days after either:

(A) The manufacturer or private labeler has received the number upon submitting a Compliance Certification covering that motor, or

(B) The expiration of 21 days from DOE's receipt of a Compliance Certification covering that motor, if the manufacturer or private labeler has not been advised by DOE that the Compliance Certification fails to satisfy § 431.123.

(2) *Display of required information.* All orientation, spacing, type sizes, type faces, and line widths to display this required information shall be the same as or similar to the display of the other performance data on the motor's permanent nameplate. The nominal full load efficiency shall be identified either by the term ''Nominal Efficiency'' or ''Nom. Eff.'' or by the terms specified in paragraph 12.58.2 of NEMA MG1–1993, as for example ''NEMA Nom. Eff. _____.'' The DOE number shall be in the form ''CC_____.''

(3) *Optional display.* The permanent nameplate of an electric motor, a separate plate, or decalcomania, may be marked with the encircled lower case letters ''ee'', for example,

or with some comparable designation or logo, if the motor meets the applicable standard prescribed in § 431.42, as determined pursuant to subpart B of this part, and is covered by a Compliance Certification that satisfies § 431.123.

(b) *Disclosure of efficiency information in marketing materials.*

(1) The same information that must appear on an electric motor's permanent nameplate pursuant to paragraph (a)(1) of this section, shall be prominently displayed:

(i) on each page of a catalog that lists the motor, and

(ii) in other materials used to market the motor.

(2) The ''ee'' logo, or other similar logo or designations, may also be used in catalogs and other materials to the same extent they may be used on labels under paragraph (a)(3) of this section.

§ 431.83 Preemption of state regulations.

The provisions of this subpart E supersede any State regulation to the extent required by section 327 of the Act. Pursuant to the Act, all State regulations that require the disclosure for any electric motor of information with respect to energy consumption, other than the information required to be disclosed in accordance with this part, are superseded.

Subpart F—[Reserved]

Subpart G—Certification and Enforcement

§ 431.121 Purpose and scope.

The regulations in this subpart set forth the procedures for manufacturers to certify that electric motors comply with the applicable energy efficiency standards set forth in subpart C of this part, and set forth standards and procedures for enforcement of this part and the underlying provisions of the Act.

§ 431.122 Prohibited acts.

(a) Each of the following is a prohibited act pursuant to sections 332 and 345 of the Act:

(1) Distribution in commerce by a manufacturer or private labeler of any new covered equipment which is not labeled in accordance with an applicable labeling rule prescribed in accordance with section 344 of the Act, and in this part;

(2) Removal from any new covered equipment or rendering illegible, by a manufacturer, distributor, retailer, or private labeler, of any label required under this part to be provided with such equipment;

(3) Failure to permit access to, or copying of records required to be supplied under the Act and this part, or failure to make reports or provide other information required to be supplied under the Act and this part;

(4) Advertisement of covered equipment, by a manufacturer, distributor, retailer, or private labeler, in a catalog from which the equipment may be purchased, without including in the catalog all information as required

by § 431.82(b)(1), provided, however, that this shall not apply to an advertisement of covered equipment in a catalog if distribution of the catalog began before the effective date of the labeling rule applicable to that equipment;

(5) Failure of a manufacturer to supply at his expense a reasonable number of units of an electric motor to a test laboratory designated by the Secretary;

(6) Failure of a manufacturer to permit a representative designated by the Secretary to observe any testing required by the Act and this part, and to inspect the results of such testing; and

(7) Distribution in commerce by a manufacturer or private labeler of any new covered equipment which is not in compliance with an applicable energy efficiency standard prescribed under the Act and this part.

(b) In accordance with sections 333 and 345 of the Act, any person who knowingly violates any provision of paragraph (a) of this section may be subject to assessment of a civil penalty of no more than $110 for each violation. Each violation of paragraphs (a)(1), (2), and (7) of this section shall constitute a separate violation with respect to each unit of covered equipment, and each day of noncompliance with paragraphs (a)(3) through (6) of this section shall constitute a separate violation.

(c) For purposes of this section:

(1) the term ''new covered equipment'' means covered equipment the title of which has not passed to a purchaser who buys such equipment for purposes other than:

(i) reselling such equipment, or

(ii) leasing such equipment for a period in excess of one year; and

(2) The term ''knowingly'' means:

(i) the having of actual knowledge, or

(ii) the presumed having of knowledge deemed to be possessed by a reasonable person who acts in the circumstances, including knowledge obtainable upon the exercise of due care.

§ 431.123 Compliance certification.

(a) *General.* Beginning 24 months after [insert date 30 days after publication in the **Federal Register**], a manufacturer or private labeler shall not distribute in commerce any basic model of an electric motor which is subject to an energy efficiency standard set forth in subpart C of this part unless it has submitted to the Department a Compliance Certification certifying, in accordance with the provisions of this section, that the basic model meets the requirements of the applicable standard. The representations in the Compliance Certification must be based upon the basic model's energy efficiency as determined in accordance with the applicable requirements of subpart B of this part. This means, in part, that either:

(1) the representations as to the basic model must be based on use of a certification organization, or

(2) any testing of the basic model on which the representations are based must be conducted at an accredited laboratory.

(b) *Required contents.*

(1) *General representations.* Each Compliance Certification must certify that:

(i) The nominal full load efficiency for each basic model of electric motor distributed is not less than the minimum nominal full load efficiency required for that motor by section § 431.42;

(ii) All required determinations on which the Compliance Certification is based were made in compliance with the applicable requirements prescribed in subpart B of this part;

(iii) All information reported in the Compliance Certification is true, accurate, and complete; and

(iv) The manufacturer or private labeler is aware of the penalties associated with violations of the Act and the regulations thereunder, and of 18 U.S.C. 1001 which prohibits knowingly making false statements to the Federal Government.

(2) *Specific data.*

(i) For each rating of electric motor (as the term ''rating'' is defined in the definition of basic model) which a manufacturer or private labeler distributes, the Compliance Certification must report the nominal full load efficiency, determined pursuant to §§ 431.23 and 431.24, of the least efficient basic model within that rating.

(ii) The Compliance Certification must identify the basic models on which actual testing has been performed to meet the requirements of section 431.24.

(iii) The format for a Compliance Certification is set forth in appendix A of this subpart.

(c) *Optional contents.* In any Compliance Certification, a manufacturer or private labeler may at its option request that DOE provide it with a unique Compliance Certification number (''CC number'') for any brand name, trademark or other label name under which the manufacturer or private labeler distributes electric motors covered by the Certification. Such a Compliance Certification must also identify all other names, if any, under which the manufacturer or private labeler distributes electric motors, and to which the request does not apply.

(d) *Signature and submission.* A manufacturer or private labeler must submit the Compliance Certification either on its own behalf, signed by a corporate officer of the company, or through a third party (for example, a trade association or other authorized representative) acting on its behalf. Where a third party is used, the Compliance Certification must identify the official of the manufacturer or private labeler who authorized the third party to make representations on the company's behalf, and must be signed by a corporate official of the third party. The Compliance Certification must be submitted to the Department by certified mail, to Department of Energy, Assistant Secretary for Energy Efficiency and Renewable Energy, Office of Building Research and Standards, Forrestal Building, 1000 Independence Avenue, SW, Washington, DC 20585–0121.

(e) *New basic models.* For electric motors, a Compliance Certification must be submitted for a new basic model only if the manufacturer or private labeler has not previously submitted to DOE a Compliance Certification, that meets the requirements of section 431.123, for a basic model that has the same rating as the new basic model, and that has a lower nominal full load efficiency than the new basic model.

(f) *Response to Compliance Certification; Compliance Certification Number (CC number).*

(1) *DOE processing of Certification.* Promptly upon receipt of a Compliance Certification, the Department will determine whether the document contains all of the elements required by this section, and may, in its discretion, determine whether all or part of the information provided in the document is accurate. The Department will then advise the submitting party in writing either that the Compliance Certification does not satisfy the requirements of this section, in which case the document will be returned, or that the Compliance Certification satisfies this section. The Department will also advise the submitting party of the basis for its determination.

(2) *Issuance of CC number(s).*

(i) Initial Compliance Certification. When DOE advises that the initial Compliance Certification submitted by or on behalf of a manufacturer or private labeler is acceptable, either:

(A) DOE will provide a single unique CC number, ''CC_____,'' to the manufacturer or private labeler, and such CC number shall be applicable to

all electric motors distributed by the manufacturer or private labeler, or

(B) When required by paragraph (f)(2) of this section, DOE will provide more than one CC number to the manufacturer or private labeler.

(ii) Subsequent Compliance Certification. When DOE advises that any other Compliance Certification is acceptable, it will provide a unique CC number for any brand name, trademark or other name when required by paragraph (f)(3) of this section.

(iii) When DOE declines to provide a CC number as requested by a manufacturer or private labeler in accordance with § 431.123(c), DOE will advise the requester of the reasons for such refusal.

(3) *Issuance of two or more CC numbers.*

(i) DOE will provide a unique CC number for each brand name, trademark or other label name for which a manufacturer or private labeler requests such a number in accordance with § 431.123(c), except as follows. DOE will not provide a CC number for any brand name, trademark or other label name:

(A) For which DOE has previously provided a CC number, or

(B) That duplicates or overlaps with other names under which the manufacturer or private labeler sells electric motors.

(ii) Once DOE has provided a CC number for a particular name, that shall be the only CC number applicable to all electric motors distributed by the manufacturer or private labeler under that name.

(iii) If the Compliance Certification in which a manufacturer or private labeler requests a CC number is the initial Compliance Certification submitted by it or on its behalf, and it distributes electric motors not covered by the CC number(s) DOE provides in response to the request(s), DOE will also provide a unique CC number that shall be applicable to all of these other motors.

§ 431.124 Maintenance of records.

(a) The manufacturer of any electric motor subject to energy efficiency standards prescribed under section 342 of the Act must establish, maintain and retain records of the following: the underlying test data for all testing conducted under this part; the development, substantiation, application, and subsequent verification of any AEDM used under this part; and any written certification received from a certification program, including a certificate of conformity, relied on under the provisions of this part. Such records must be organized and indexed in a fashion which makes them readily accessible for review. The records must include the supporting test data associated with tests performed on any test units to satisfy the requirements of this subpart (except tests performed by the Department directly).

(b) All such records must be retained by the manufacturer for a period of two years from the date that production of the applicable basic model of electric motor has ceased. Records must be retained in a form allowing ready access to the Department upon request.

§ 431.125 Imported equipment.

(a) Pursuant to sections 331 and 345 of the Act, any person importing any covered equipment into the United States shall comply with the provisions of the Act and of this part, and is subject to the remedies of this part.

(b) Any covered equipment offered for importation in violation of the Act and of this part shall be refused admission into the customs territory of the United States under rules issued by the Secretary of the Treasury, except that the Secretary of the Treasury may, by such rules, authorize the importation of such covered equipment upon such terms and conditions (including the furnishing of a bond) as may appear to the Secretary of Treasury appropriate to ensure that such covered equipment will not violate the Act and this part, or will be exported or abandoned to the United States.

§ 431.126 Exported equipment.

Pursuant to sections 330 and 345 of the Act, this part shall not apply to any covered equipment if (a) such covered equipment is manufactured, sold, or held for sale for export from the United States (or such product was imported for export), unless such equipment is, in fact, distributed in commerce for use in the United States, and (b) such covered equipment, when distributed in commerce, or any container in which it is enclosed when so distributed, bears a stamp or label stating that such covered equipment is intended for export.

§ 431.127 Enforcement.

(a) *Test notice.* Upon receiving information in writing, concerning the energy performance of a particular electric motor sold by a particular manufacturer or private labeler, which indicates that the electric motor may not be in compliance with the applicable energy efficiency standard, or upon undertaking to ascertain the accuracy of the efficiency rating on the nameplate or in marketing materials for an electric motor, disclosed pursuant to subpart E of this part, the Secretary may conduct testing of that covered equipment under this subpart by means of a test notice addressed to the manufacturer in accordance with the following requirements:

(1) The test notice procedure will only be followed after the Secretary or his/her designated representative has examined the underlying test data (or, where appropriate, data as to use of an alternative efficiency determination method) provided by the manufacturer and after the manufacturer has been offered the opportunity to meet with the Department to verify, as applicable, compliance with the applicable efficiency standard, or the accuracy of labeling information, or both. In addition, where compliance of a basic model was certified based on an AEDM, the Department shall have the discretion to pursue the provisions of section 431.24(a)(4)(iii) prior to invoking the test notice procedure. A representative designated by the Secretary shall be permitted to observe any reverification procedures undertaken pursuant to this subpart, and to inspect the results of such reverification.

(2) The test notice will be signed by the Secretary or his/her designee. The test notice will be mailed or delivered by the Department to the plant manager or other responsible official, as designated by the manufacturer.

(3) The test notice will specify the model or basic model to be selected for testing, the method of selecting the test sample, the date and time at which testing shall be initiated, the date by which testing is scheduled to be completed and the facility at which testing will be conducted. The test notice may also provide for situations in which the specified basic model is unavailable for testing, and may include alternative basic models.

(4) The Secretary may require in the test notice that the manufacturer of an electric motor shall ship at his expense a reasonable number of units of a basic model specified in such test notice to a testing laboratory designated by the Secretary. The number of units of a basic model specified in a test notice shall not exceed twenty (20).

(5) Within five working days of the time the units are selected, the manufacturer shall ship the specified test units of a basic model to the testing laboratory.

(b) *Testing laboratory.* Whenever the Department conducts enforcement testing at a designated laboratory in accordance with a test notice under this section, the resulting test data shall constitute official test data for that basic model. Such test data will be used by the Department to make a determination

of compliance or noncompliance if a sufficient number of tests have been conducted to satisfy the requirements of appendix B of this subpart.

(c) *Sampling.* The determination that a manufacturer's basic model complies with its labeled efficiency, or the applicable energy efficiency standard, shall be based on the testing conducted in accordance with the statistical sampling procedures set forth in appendix B of this subpart and the test procedures set forth in appendix A to subpart B of this part.

(d) *Test unit selection.* A Department inspector shall select a batch, a batch sample, and test units from the batch sample in accordance with the provisions of this paragraph and the conditions specified in the test notice.

(1) The batch may be subdivided by the Department utilizing criteria specified in the test notice.

(2) A batch sample of up to 20 units will then be randomly selected from one or more subdivided groups within the batch. The manufacturer shall keep on hand all units in the batch sample until such time as the basic model is determined to be in compliance or non-compliance.

(3) Individual test units comprising the test sample shall be randomly selected from the batch sample.

(4) All random selection shall be achieved by sequentially numbering all of the units in a batch sample and then using a table of random numbers to select the units to be tested.

(e) *Test unit preparation.*

(1) Prior to and during the testing, a test unit selected in accordance with paragraph (d) of this section shall not be prepared, modified, or adjusted in any manner unless such preparation, modification, or adjustment is allowed by the applicable Department of Energy test procedure. One test shall be conducted for each test unit in accordance with the applicable test procedures prescribed in appendix A to subpart B.

(2) No quality control, testing, or assembly procedures shall be performed on a test unit, or any parts and sub-assemblies thereof, that is not performed during the production and assembly of all other units included in the basic model.

(3) A test unit shall be considered defective if such unit is inoperative or is found to be in noncompliance due to failure of the unit to operate according to the manufacturer's design and operating instructions. Defective units, including those damaged due to shipping or handling, shall be reported immediately to the Department. The Department shall authorize testing of an additional unit on a case-by-case basis.

(f) *Testing at manufacturer's option.*

(1) If a manufacturer's basic model is determined to be in noncompliance with the applicable energy performance standard at the conclusion of Department testing in accordance with the sampling plan specified in appendix B of this subpart, the manufacturer may request that the Department conduct additional testing of the basic model according to procedures set forth in appendix B of this subpart.

(2) All units tested under this paragraph shall be selected and tested in accordance with the provisions given in paragraphs (a) through (e) of this section.

(3) The manufacturer shall bear the cost of all testing conducted under this paragraph.

(4) The manufacturer shall cease distribution of the basic model tested under the provisions of this paragraph from the time the manufacturer elects to exercise the option provided in this paragraph until the basic model is determined to be in compliance. The Department may seek civil penalties for all units distributed during such period.

(5) If the additional testing results in a determination of compliance, a notice of allowance to resume distribution shall be issued by the Department.

§ 431.128 Cessation of distribution of a basic model.

(a) In the event that a model is determined non-compliant by the Department in accordance with § 431.127 of this part or if a manufacturer or private labeler determines a model to be in noncompliance, then the manufacturer or private labeler shall:

(1) Immediately cease distribution in commerce of the basic model.

(2) Give immediate written notification of the determination of noncompliance, to all persons to whom the manufacturer has distributed units of the basic model manufactured since the date of the last determination of compliance.

(3) Pursuant to a request made by the Secretary, provide the Department within 30 days of the request, records, reports, and other documentation pertaining to the acquisition, ordering, storage, shipment, or sale of a basic model determined to be in noncompliance.

(4) The manufacturer may modify the non-compliant basic model in such manner as to make it comply with the applicable performance standard. Such modified basic model shall then be treated as a new basic model and must be certified in accordance with the provisions of this subpart; except that in addition to satisfying all requirements of this subpart, the manufacturer shall also maintain records that demonstrate that modifications have been made to all units of the new basic model prior to distribution in commerce.

(b) If a basic model is not properly certified in accordance with the requirements of this subpart, the Secretary may seek, among other remedies, injunctive action to prohibit distribution in commerce of such basic model.

§ 431.129 Subpoena.

Pursuant to sections 329(a) and 345 of the Act, for purposes of carrying out this part, the Secretary or the Secretary's designee, may sign and issue subpoenas for the attendance and testimony of witnesses and the production of relevant books, records, papers, and other documents, and administer the oaths. Witnesses summoned under the provisions of this section shall be paid the same fees and mileage as are paid to witnesses in the courts of the United States. In case of contumacy by, or refusal to obey a subpoena served upon any persons subject to this part, the Secretary may seek an order from the District Court of the United States for any District in which such person is found or resides or transacts business requiring such person to appear and give testimony, or to appear and produce documents. Failure to obey such order is punishable by such court as a contempt thereof.

§ 431.130 Remedies.

If the Department determines that a basic model of a covered equipment does not comply with an applicable energy conservation standard:

(a) The Department will notify the manufacturer, private labeler, or any other person as required of this finding and of the Secretary's intent to seek a judicial order restraining further distribution in commerce of such basic model unless the manufacturer, private labeler or any other person as required, delivers to the Department within 15 calendar days a statement, satisfactory to the Department, of the steps he will take to ensure that the non-compliant model will no longer be distributed in commerce. The Department will monitor the implementation of such statement.

(b) If the manufacturer, private labeler, or any other person as required, fails to stop distribution of the non-compliant model, the Secretary may seek to restrain such violation in

accordance with sections 334 and 345 of the Act.

(c) The Secretary shall determine whether the facts of the case warrant the assessment of civil penalties for knowing violations in accordance with sections 333 and 345 of the Act.

§ 431.131 Hearings and appeals.

(a) Pursuant to sections 333(d) and 345 of the Act, before issuing an order assessing a civil penalty against any person under this section, the Secretary shall provide to such person notice of the proposed penalty. Such notice shall inform such person of that person's opportunity to elect in writing within 30 days after the date of receipt of such notice to have the procedures of paragraph (c) of this section (in lieu of those in paragraph (b) of this section) apply with respect to such assessment.

(b)(1) Unless an election is made within 30 calendar days after receipt of notice under paragraph (a) of this section to have paragraph (c) of this section apply with respect to such penalty, the Secretary shall assess the penalty, by order, after a determination of violation has been made on the record after an opportunity for an agency hearing pursuant to section 554 of title 5, United States Code, before an administrative law judge appointed under section 3195 of such title 5. Such assessment order shall include the administrative law judge's findings and the basis for such assessment.

(2) Any person against whom a penalty is assessed under this section may, within 60 calendar days after the date of the order of the Secretary assessing such penalty, institute an action in the United States Court of Appeals for the appropriate judicial circuit for judicial review of such order in accordance with chapter 7 of title 5, United States Code. The court shall have jurisdiction to enter a judgment affirming, modifying, or setting aside in whole or in part, the order of the Secretary, or the court may remand the proceeding to the Secretary for such further action as the court may direct.

(c)(1) In the case of any civil penalty with respect to which the procedures of this section have been elected, the Secretary shall promptly assess such penalty, by order, after the date of the receipt of the notice under paragraph (a) of this section of the proposed penalty.

(2) If the civil penalty has not been paid within 60 calendar days after the assessment has been made under paragraph (c)(1) of this section, the Secretary shall institute an action in the appropriate District Court of the United States for an order affirming the assessment of the civil penalty. The court shall have authority to review de novo the law and the facts involved and shall have jurisdiction to enter a judgment enforcing, modifying, and enforcing as so modified, or setting aside in whole or in part, such assessment.

(3) Any election to have this paragraph apply may not be revoked except with the consent of the Secretary.

(d) If any person fails to pay an assessment of a civil penalty after it has become a final and unappealable order under paragraph (b) of this section, or after the appropriate District Court has entered final judgment in favor of the Secretary under paragraph (c) of this section, the Secretary shall institute an action to recover the amount of such penalty in any appropriate District Court of the United States. In such action, the validity and appropriateness of such final assessment order or judgment shall not be subject to review.

(e)(1) In accordance with the provisions of sections 333(d)(5)(A) and 345 of the Act and notwithstanding the provisions of title 28, United States Code, or section 502(c) of the Department of Energy Organization Act, the Secretary shall be represented by the General Counsel of the Department of Energy (or any attorney or attorneys within the Department designated by the Secretary) who shall supervise, conduct, and argue any civil litigation to which paragraph (c) of this section applies including any related collection action under paragraph (d) of this section in a court of the United States or in any other court, except the Supreme Court of the United States. However, the Secretary or the General Counsel shall consult with the Attorney General concerning such litigation and the Attorney General shall provide, on request, such assistance in the conduct of such litigation as may be appropriate.

(2) In accordance with the provisions of sections 333(d)(5)(B) and 345 of the Act, and subject to the provisions of section 502(c) of the Department of Energy Organization Act, the Secretary shall be represented by the Attorney General, or the Solicitor General, as appropriate, in actions under this section, except to the extent provided in paragraph (e)(1) of this section.

(3) In accordance with the provisions of sections 333(d)(5)(C) and 345 of the Act, section 402(d) of the Department of Energy Organization Act shall not apply with respect to the function of the Secretary under this section.

§ 431.132 Confidentiality.

Pursuant to the provisions of 10 CFR 1004.11, any person submitting information or data which the person believes to be confidential and exempt from public disclosure should submit one complete copy, and fifteen copies from which the information believed to be confidential has been deleted. In accordance with the procedures established at 10 CFR 1004.11, the Department shall make its own determination with regard to any claim that information submitted be exempt from public disclosure.

BILLING CODE 6450–01–P

APPENDIX A TO SUBPART G OF PART 431 — COMPLIANCE CERTIFICATION

CERTIFICATION OF COMPLIANCE WITH ENERGY EFFICIENCY STANDARDS FOR ELECTRIC MOTORS

(Office of Management and Budget Control Number: 1910-5104. Expires 02/28/2001)

1. Name and Address of Company (the "company"):

_____

_____

_____

_____

2. Name(s) to be Marked on Electric Motors to Which this Compliance Certification Applies:

_____

_____

_____

_____

3. If manufacturer or private labeler wishes to receive a unique Compliance Certification number for use with any particular brand name, trademark, or other label name, fill out the following two items:

A. List each brand name, trademark, or other label name for which the company requests a Compliance Certification number:

_____

_____

_____

B. List other name(s), if any, under which the company sells electric motors (if not listed in item 2 above):

_____

_____

_____

Submit by Certified Mail to: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Office of Building Research and Standards, Forrestal Building, 1000 Independence Avenue, SW, Washington, DC 20585-0121.

This Compliance Certification reports on and certifies compliance with requirements contained in 10 CFR Part 431 (Energy Conservation Program for Certain Commercial and Industrial Equipment) and Part C of the Energy Policy and Conservation Act (Public Law 94-163), and amendments thereto. It is signed by a responsible official of the above named company. Attached and incorporated as part of this Compliance Certification is a Listing of Electric Motor Efficiencies. For each rating of electric motor* for which the Listing specifies the nominal full load efficiency of a basic model, the company distributes no less efficient basic model with that rating and all basic models with that rating comply with the applicable energy efficiency standard.

* For this purpose, the term "rating" means one of the 113 combinations of an electric motor's horsepower (or standard kilowatt equivalent), number of poles, and open or enclosed construction, with respect to which section 431.42 of 10 CFR Part 431 prescribes nominal full load efficiency standards.

Person to Contact for Further Information:

Name: _____

Address: _____

_____

_____

_____

Telephone Number: _____

Facsimile Number: _____

If any part of this Compliance Certification, including the Attachment, was prepared by a third party organization under the provisions of section 431.123 of 10 CFR Part 431, the company official authorizing third party representations:

Name: _____

Address: _____

_____

_____

_____

Telephone Number: _____

Facsimile Number: _____

Third Party Organization Officially Acting as Representative:

Third Party Organization: _____

Responsible Person at that Organization: _____

Address: _____

_____

_____

_____

Telephone Number: _____

Facsimile Number: _____

All required determinations on which this Compliance Certification is based were made in conformance with the applicable requirements in 10 CFR Part 431, subpart B. All information reported in this Compliance Certification is true, accurate, and complete. The company is aware of the penalties associated with violations of the Act and the regulations thereunder, and is also aware of the provisions contained in 18 U.S.C. 1001, which prohibits knowingly making false statements to the Federal Government.

Signature: _____ Date: _____

Name: _____

Title: _____

Firm or Organization: _____

ATTACHMENT TO CERTIFICATION OF COMPLIANCE WITH ENERGY EFFICIENCY STANDARDS FOR ELECTRIC MOTORS: LISTING OF ELECTRIC MOTOR EFFICIENCIES

Date: _____

Name of Company: _____

_____

Rating of Electric Motor

Motor Horsepower/ Kilowatts	Number of Poles	Open or Enclosed Motor	Least Efficient Basic Model - (Model Number(s))	Nominal Full Load Efficiency
1 or .75	6	Open	_____	_____
1 or .75	4	Open	_____	_____
1 or .75	6	Enclosed	_____	_____
1 or .75	4	Enclosed	_____	_____
1 or .75	2	Enclosed	_____	_____
1.5 or 1.1	6	Open	_____	_____
1.5 or 1.1	4	Open	_____	_____
1.5 or 1.1	2	Open	_____	_____
1.5 or 1.1	6	Enclosed	_____	_____
1.5 or 1.1	4	Enclosed	_____	_____
1.5 or 1.1	2	Enclosed	_____	_____
...	...	...	_____	_____
etc.	etc.	etc.	_____	_____

Note: Place an asterisk beside each reported nominal full load efficiency that is determined by actual testing rather than by application of an alternative efficiency determination method. Also list below additional basic models that were subjected to actual testing.

Basic Model means all units of a given type of covered equipment (or class thereof) manufactured by a single manufacturer, and, with respect to electric motors, which (i) have the same rating, (ii) have electrical design characteristics that are essentially identical, and (iii) do not have any differing physical or functional characteristics that affect energy consumption or efficiency.

Rating means one of the 113 combinations of an electric motor's horsepower (or standard kilowatt equivalent), number of poles, and open or enclosed construction, with respect to which section 431.42 of 10 CFR Part 431 prescribes nominal full load efficiency standards.

Models Actually Tested and Not Previously Identified:

Rating of Electric Motor				
Motor Power Output (e.g. 1 hp or .75 kW)	**Number of Poles**	**Open or Enclosed Motor**	**Basic Model(s) (Model Number(s))**	**Nominal Full Load Efficiency**
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
...	...	...	...	...
etc.	etc.	etc.	etc.	etc.

BILLING CODE 6450–01–C

Appendix B to Subpart G of Part 431—Sampling Plan for Enforcement Testing

Step 1. The first sample size (n_1) must be five or more units.

Step 2. Compute the mean ($\bar{X}_1$) of the measured energy performance of the n_1 units in the first sample as follows:

$$\bar{X}_1 = \frac{1}{n_1}\sum_{i=1}^{n_1} X_i \qquad (1)$$

where X_i is the measured full-load efficiency of unit i.

Step 3. Compute the sample standard deviation (S_1) of the measured full-load efficiency of the n_1, units in the first sample as follows:

$$S_1 = \sqrt{\frac{\sum_{i=1}^{n_1}\left(X_i - \bar{X}_1\right)^2}{n_1 - 1}} \qquad (2)$$

Step 4. Compute the standard error ($SE(X_1)$) of the mean full-load efficiency of the first sample as follows:

$$SE\left(\bar{X}_1\right) = \frac{S_1}{\sqrt{n_1}} \qquad (3)$$

Step 5. Compute the lower control limit (LCL_1) for the mean of the first sample using RE as the desired mean as follows:

$$LCL_1 = RE - tSE\left(\bar{X}_1\right) \qquad (4)$$

where:

RE is the applicable EPCA nominal full-load efficiency when the test is to determine compliance with the applicable statutory standard, or is the labeled nominal full-load efficiency when the test is to determine compliance with the labeled efficiency value, and

t is the 2.5th percentile of a t-distribution for a sample size of n_1, which yields a 97.5 percent confidence level for a one-tailed t-test.

Step 6. Compare the mean of the first sample ($\bar{X}_1$) with the lower control limit (LCL_1) to determine one of the following:

(i) If the mean of the first sample is below the lower control limit, then the basic model is in non-compliance and testing is at an end.

(ii) If the mean is equal to or greater than the lower control limit, no final determination of compliance or non-compliance can be made; proceed to Step 7.

Step 7. Determine the recommended sample size (n) as follows:

$$n = \left[\frac{tS_1(120 - 0.2RE)}{RE(20 - 0.2RE)}\right]^2 \qquad (5)$$

where S_1, RE and t have the values used in Steps 3 and 5, respectively. The factor

$$\frac{120 - 0.2RE}{RE(20 - 0.2RE)}$$

is based on a 20 percent tolerance in the total power loss at full-load and fixed output power.

Given the value of n, determine one of the following:

(i) If the value of n is less than or equal to n_1 and if the mean energy efficiency of the first sample ($\bar{X}_1$) is equal to or greater than the lower control limit (LCL_1), the basic model is in compliance and testing is at an end.

(ii) If the value of n is greater than n_1, the basic model is in non-compliance. The size of a second sample n_2 is determined to be the smallest integer equal to or greater than the difference $n - n_1$. If the value of n_2 so calculated is greater than $20 - n_1$, set n_2 equal to $20 - n_1$.

Step 8. Compute the combined mean ($\bar{X}_2$) of the measured energy performance of the n_1 and n_2 units of the combined first and second samples as follows:

$$\bar{X}_2 = \frac{1}{n_1 + n_2}\sum_{i=1}^{n_1+n_2} X_i \qquad (6)$$

Step 9. Compute the standard error ($SE(\bar{X}_2)$) of the mean full-load efficiency of the n_1 and n_2 units in the combined first and second samples as follows:

$$SE\left(\bar{X}_2\right) = \frac{S_1}{\sqrt{n_1 + n_2}} \qquad (7)$$

(Note that S_1 is the value obtained above in Step 3.)

Step 10. Set the lower control limit (LCL_2) to,

$$LCL_2 = RE - tSE\left(\bar{X}_2\right) \qquad (8)$$

where t has the value obtained in Step 5, and compare the combined sample mean ($\bar{X}_2$) to the lower control limit (LCL_2) to find one of the following:

(i) If the mean of the combined sample ($\bar{X}_2$) is less than the lower control limit (LCL_2), the basic model is in non-compliance and testing is at an end.

(ii) If the mean of the combined sample ($\bar{X}_2$) is equal to or greater than the lower control limit (LCL_2), the basic model is in compliance and testing is at an end.

Manufacturer-Option Testing

If a determination of non-compliance is made in Steps 6, 7 or 10, above, the manufacturer may request that additional testing be conducted, in accordance with the following procedures.

Step A. The manufacturer requests that an additional number, n_3, of units be tested, with n_3 chosen such that $n_1 + n_2 + n_3$ does not exceed 20.

Step B. Compute the mean full-load efficiency, standard error, and lower control limit of the new combined sample in accordance with the procedures prescribed in Steps 8, 9, and 10, above.

Step C. Compare the mean performance of the new combined sample to the lower control limit (LCL_2) to determine one of the following:

(a) If the new combined sample mean is equal to or greater than the lower control limit, the basic model is in compliance and testing is at an end.

(b) If the new combined sample mean is less than the lower control limit and the value of $n_1 + n_2 + n_3$ is less than 20, the manufacturer may request that additional units be tested. The total of all units tested may not exceed 20. Steps A, B, and C are then repeated.

(c) Otherwise, the basic model is determined to be in non-compliance.

[FR Doc. 99–21119 Filed 10–4–99; 8:45 am]

BILLING CODE 6450–01–P