

Done in Washington, DC, this 15th day of October 2009.

**Kevin Shea**

*Acting Administrator, Animal and Plant Health Inspection Service.*

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## DEPARTMENT OF ENERGY

### 10 CFR Part 430

[Docket No. EERE-2008-BT-TP-0007]

RIN 1904-AB77

#### Energy Conservation Program: Test Procedures for Fluorescent Lamp Ballasts (Standby Mode)

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

**ACTION:** Final rule.

**SUMMARY:** The U.S. Department of Energy (DOE) is amending its test procedures for fluorescent lamp ballasts under the Energy Policy and Conservation Act. These amendments address the measurement of energy consumption of fluorescent lamp ballasts in the standby mode. These amendments do not address energy consumption in off mode, because DOE has determined that these products do not operate in off mode.

**DATES:** This rule is effective November 23, 2009. The incorporation by reference of certain publications listed in this rule was approved by the Director of the Federal Register on November 23, 2009.

**ADDRESSES:** You may review copies of all materials related to this rulemaking at the U.S. Department of Energy, Resource Room of the Building Technologies Program, 950 L'Enfant Plaza, SW., Suite 600, Washington, DC, (202) 586-2945, between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays. Please call Ms. Brenda Edwards at the above telephone number for additional information regarding visiting the Resource Room.

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**SUPPLEMENTARY INFORMATION:** This final rule incorporates by reference into Appendix Q of Subpart B of Title 10, Code of Federal Regulations, part 430, the following industry standards from the American National Standards Institute (ANSI):

1. ANSI Standard C82.2-1984, Revision of ANSI C82.2-1977 "American National Standard for Lamp Ballasts—Methods of Measurement," October 21, 1983; and

2. ANSI Standard C82.2-2002, Revision of ANSI C82.2-1994 (R1995) "American National Standard for Lamp Ballasts—Methods of Measurement of Fluorescent Lamp Ballasts," June 6, 2002.

Copies of the ANSI standards can be obtained from the American National Standards Institute, 25 W. 43rd Street, 4th Floor, New York, NY 10036, (212) 642-4900, or <http://www.ansi.org>. One can also view a copy of these standards at the U.S. Department of Energy, Resource Room of the Building Technologies Program, 950 L'Enfant Plaza, SW., 6th Floor, Washington, DC 20024, (202) 586-2945, between 9 a.m. and 4 p.m., Monday through Friday, except Federal holidays.

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#### I. Authority and Background

Title III of the Energy Policy and Conservation Act (42 U.S.C. 6291 *et seq.*; EPCA or the Act) sets forth a variety of provisions designed to improve energy efficiency. Part A<sup>1</sup> of Title III (42 U.S.C. 6291-6309) establishes the "Energy Conservation Program for Consumer Products Other Than Automobiles," which covers consumer products (all of which are referred to below as "covered products"), including fluorescent lamp ballasts (ballasts). (42 U.S.C. 6291(1)-(2) and 6292(a)(13))

The program consists essentially of testing, labeling, and Federal energy conservation standards. The testing requirements consist of test procedures that manufacturers of covered products must use as the basis for certifying to DOE that their products comply with EPCA energy conservation standards and for representing the energy efficiency of their products.

Section 323(b) of EPCA (42 U.S.C. 6293 (b)) authorizes DOE to amend or establish new test procedures as appropriate for each covered product. It states that "[a]ny test procedures prescribed or amended under this section shall be reasonably designed to produce test results which measure energy efficiency, energy use, \* \* \* or estimated annual operating cost of a covered product during a representative average use cycle or period of use, as determined by the Secretary [of Energy], and shall not be unduly burdensome to conduct." (42 U.S.C. 6293(b)(3)) In addition, EPCA states that DOE "shall determine, in the rulemaking carried out with respect to prescribing such procedure, to what extent, if any, the proposed test procedure would alter the measured energy efficiency \* \* \* of any covered product as determined under the existing test procedure." (42 U.S.C. 6293(e)(1)) If DOE determines that the amended test procedure would alter the measured efficiency of a covered product, DOE must amend the applicable energy conservation standard accordingly. (42 U.S.C. 6293(e)(2))

For ballasts, the test procedures must be "in accord with ANSI Standard C82.2-1984 or other test procedures determined appropriate by the Secretary." (42 U.S.C. 6293(b)(5)) DOE's existing test procedures for ballasts, adopted pursuant to the above provisions, appear at Title 10 of the Code of Federal Regulations (CFR) part 430, subpart B, appendix Q ("Uniform

<sup>1</sup> For editorial reasons, Part B (Consumer Products) and Part C (Commercial Equipment) of Title III of EPCA were redesignated as Parts A and A-1, respectively, in the United States Code.

Test Method for Measuring the Energy Consumption of Fluorescent Lamp Ballasts”).

The Energy Independence and Security Act of 2007 (Pub. L. 110–140; EISA 2007) was enacted December 19, 2007, and contains numerous amendments to EPCA. These include a requirement that DOE must amend the test procedures to include standby mode and off mode energy consumption in the overall energy efficiency, energy consumption, or other energy descriptor for each covered product for which DOE’s current test procedures do not fully account for standby mode and off mode energy consumption. If that is technically infeasible, DOE must prescribe a separate standby mode and off mode energy use test procedure, if technically feasible. (42 U.S.C. 6295(gg)(2)(A)) Any such amendment must consider the most current versions of International Electrotechnical Commission (IEC) Standards 62301 and 62087. *Id.*

In a separate rulemaking proceeding, DOE is considering energy conservation standards for fluorescent lamp ballasts (docket number EERE–2007–BT–STD–0016; hereafter referred to as the “ballast standards rulemaking”). DOE initiated that rulemaking by publishing a **Federal Register** notice announcing a public meeting and availability of the Framework Document (“Energy Efficiency Program for Consumer Products: Public Meeting and Availability of the Framework Document for Fluorescent Lamp Ballasts”) on January 22, 2008. 73 FR 3653. One issue DOE raised for comment in the ballast standards rulemaking Framework Document related to DOE’s obligation to develop a test procedure that measures the energy consumed by fluorescent lamp ballasts in standby mode and off mode. DOE received comments on this issue from interested parties, both orally at the February 6, 2008 Framework public meeting and in writing, and DOE addressed these comments in a notice of proposed rulemaking (NOPR) for the test procedure published on January 21, 2009. 74 FR 3450 (hereafter the “January 2009 NOPR”). DOE presented and explained the test procedure proposed rule and received oral comments at a public meeting on February 2, 2009. DOE invited written comments, data, and other information on the January 2009 NOPR and accepted such material through April 6, 2009. *Id.*

The amendments contained in section 310(3) of EISA 2007 insert a new subsection (gg)(3) into section 325 of EPCA, which in part directs that any final rule establishing or revising a

standard for a covered product adopted after July 1, 2010, shall address standby mode and off mode energy use. (42 U.S.C. 6295(gg)(3)) However, pursuant to new section 325(gg)(2)(C) of EPCA (42 U.S.C. 6295(gg)(2)(C)), the amendments for the test procedure will not apply to the existing energy conservation standards for fluorescent lamp ballasts. Instead, the test procedure described in today’s final rule will lay the groundwork for DOE to measure and consider energy consumed in standby mode and off mode for the ballast standards rulemaking (scheduled to be completed in 2011) and future rulemakings. This test procedure will also provide a means for determining compliance with any energy conservation standard for fluorescent lamp ballasts which DOE adopts that includes such energy consumption.

## II. Summary of the Final Rule

In this final rule, DOE is modifying the current test procedures for fluorescent lamp ballasts to incorporate a measure of standby mode and off mode energy consumption, as required by section 310 of EISA 2007.

In the context of fluorescent lamp ballasts, DOE reviewed the definitions of “standby mode” and “off mode” contained in EPCA section 325(gg)(1). (42 U.S.C. 6295(gg)(1)) DOE found that while it is possible for fluorescent lamp ballasts to operate in standby mode, the off mode condition does not apply to fluorescent lamp ballasts because they do not operate in this mode. For this reason, today’s final rule prescribes a test method for measuring power consumed in standby mode (*see* section III.C), but does not prescribe any off mode test method.

Because no standby mode energy conservation standard for fluorescent lamp ballasts currently exists, the introductory sentence in subsection 2.2 of appendix Q to subpart B of part 430 prescribed by this final rule states that “[t]he measurement of standby mode power need not be performed to determine compliance with energy conservation standards for fluorescent lamp ballasts at this time. The above statement will be removed as part of the rulemaking to amend the energy conservation standards for fluorescent lamp ballasts to account for standby mode energy consumption, and the following shall apply on the compliance date for such requirements.” Although its application is not currently required, the test method prescribed by this final rule will enable DOE to consider the development of standby mode energy consumption requirements in the

context of the fluorescent lamp ballast standards rulemaking.

As explained in the January 2009 NOPR, the definition of “standby mode” created by EISA 2007 does not apply to all ballasts. 74 FR 3450, 3456 (Jan. 21, 2009). Therefore, DOE proposed test procedure amendments for standby mode that would apply only to certain ballasts under certain operating conditions. *See* sections III.A and III.B for a detailed discussion of the definitions for “standby mode” and “off mode” and of the proposed test procedures for standby mode.

The amendments contained in this final rule are based on provisions contained in and adapted from the current ANSI testing standard, ANSI Standard C82.2–2002. DOE’s existing test procedure for fluorescent lamp ballasts measures the input power for active mode using ANSI Standard C82.2–1984, as contained in 10 CFR part 430, subpart B, appendix Q, “Uniform Test Method for Measuring the Energy Consumption of Fluorescent Lamp Ballasts.” However, the amendments contained in this final rule are based on measuring input power for the standby mode test procedure using ANSI Standard C82.2–2002, the most current version of that standard. The only difference between the two test procedures relates to the interference of testing instrumentation. Specifically, the input power measurement of C82.2–2002 reduces the interference of instrumentation on the input power measurement as compared to C82.2–1984. However, because modern instrumentation does not significantly interfere with input power measurements, DOE understands that the differences between the input power measurements of the two test procedures are negligible.

At this time, DOE is not updating the fluorescent lamp ballast active mode test procedure references of ANSI Standard C82.2–1984 because DOE intends to consider revising the fluorescent lamp ballast active mode test procedure in a subsequent rulemaking, as discussed on pages 7 through 9 of the framework document and at the Framework Document public meeting in the ballast standards rulemaking. (Public Meeting Transcript, No. 9 at p. 70)<sup>2</sup>

<sup>2</sup> A notation in the form “Public Meeting Transcript, No. 9 at pp. 11–12 and 69–78” identifies a written comment that DOE has received and has included in the docket of a rulemaking. This particular notation refers to a comment: (1) Submitted during the public meeting on February 6, 2008; (2) in document number 9 in the docket of this rulemaking; and (3) appearing on page 70 of the transcript. In particular, this comment is found

As discussed above, EPCA requires that DOE determine to what extent, if any, the proposed test procedure would alter the measured energy efficiency of a covered product as determined under the current test procedure. (42 U.S.C. 6293(e)(1)) The amendments contained in today's final rule only add provisions to sections 1, 2, and 3 of appendix Q to subpart B of Part 430 to address new definitions, test conditions, and methods for measuring standby mode power. These amendments do not affect the existing active mode test procedure or energy conservation standards in place for fluorescent lamp ballasts, because: (1) The existing active mode test procedures are separate from and can be applied independent of the standby mode test procedure provisions; (2) the current energy conservation standards for fluorescent lamp ballasts do not address standby mode energy consumption; and (3) the standby mode test procedure requirements do not apply until the compliance date set forth in the final rule amending the energy conservation standards for fluorescent lamp ballasts to account for standby mode energy consumption (anticipated in 2011). Thus, the test procedure amendments contained in this final rule will not change the measurement of the ballast efficacy factor, the metric on which the current energy conservation standard is based. In addition, EISA 2007 provides that amendments to the test procedures to include standby mode and off mode energy consumption shall not be used to determine compliance with previously established standards. (42 U.S.C. 6295(gg)(2)(C)) Thus, inclusion of the standby mode provisions in today's final rule amending DOE's fluorescent lamp ballast test procedures will not alter the measured fluorescent lamp ballast energy efficiency and will not affect a manufacturer's ability to demonstrate compliance with the existing energy conservation standards for fluorescent lamp ballasts. Based on the circumstances described above, DOE believes that the EPCA requirement to address whether a test procedure amendment would alter the measured efficiency of a product (thereby requiring amendment of existing standards) has been satisfied and that no further amendments are necessary. DOE notes that any representation regarding fluorescent lamp ballast standby mode energy use (such as in manufacturer marketing literature) must be based on the test procedure prescribed in this

final rule after it becomes effective. DOE is currently unaware, however, of any manufacturer making such representations. Thus, DOE believes that the test procedure in itself will have little (if any) impact on manufacturers unless and until DOE establishes efficiency standards addressing standby mode energy consumption in the fluorescent ballast standards final rule.

The final rule also amends the regulations to conform to format requirements regarding the incorporation by reference of the ANSI standards.

### III. Discussion

#### A. Definitions

In the January 2009 NOPR, DOE proposed that only active mode and standby mode operation are applicable to fluorescent lamp ballasts. DOE also proposed that off mode does not exist for a ballast. 74 FR 3450, 3453 (Jan. 21, 2009). As discussed below, this position remains valid for today's final rule.

##### 1. Active Mode

Although DOE is not directed to adopt a test procedure for active mode in section 325(gg) of EPCA, a review of the definition of "active mode" and DOE's interpretation of its meaning is necessary to clarify the definition of "off mode," which uses the term "active mode." EPCA section 325(gg)(1)(A)(i) defines "active mode" as "the condition in which an energy-using product—(I) Is connected to a main power source; (II) has been activated; and (III) provides 1 or more main functions." (42 U.S.C. 6295(gg)(1)(A)(i)) In the January 2009 NOPR, DOE stated that the main function of a fluorescent lamp ballast is to operate one or more fluorescent lamps (*i.e.*, provide and regulate current to the lamps). 74 FR 3450, 3453 (Jan. 21, 2009). DOE also stated that the ballast is operating the lamp when the lamp is emitting any amount of light. *Id.*

In response to the January 2009 NOPR, the National Electrical Manufacturers Association (NEMA) questioned how DOE would treat ballasts subject to a "fault load," such as ballasts operating under conditions where it is not connected to a lamp, is connected to a failed lamp, or is connected to a faulty socket. (NEMA, No. 27 at p. 1) NEMA commented that this condition is not considered in the European Union (EU) definition of "standby mode" in Commission Regulation No. 1265/2008, which states: "'Standby mode(s)' means a condition where the equipment is connected to the mains power source, depends on energy input from the main power

source to work as intended and provides only the following functions, which may persist for an indefinite time:— Reactivation function, or reactivation function and only an indication of enabled reactivation function, and/or— information or status display;"

Commission Regulation (EC) No 1275/2008 of 17 December 2008, L 339/46 EN Official Journal of the European Union 18.12.2008. (NEMA, No. 27 at p. 2)

In amending its test procedures to account for standby mode and off mode energy consumption, Congress instructed DOE to take into account the current version of IEC 62301 (EISA 2007, section 310). DOE notes that the "standby mode" definition in IEC 62301 defines "standby mode" as the "lowest power consumption mode which cannot be switched off (influenced) by the user and that may persist for an indefinite time when an appliance is connected to the main electricity supply and used in accordance with the manufacturer's instructions." However, this IEC definition does not apply to a ballast connected to a "fault load," because connecting a ballast to a fault load is not using a ballast in accordance with the manufacturer's instructions. Similarly, while not controlling here, DOE agrees that ballasts connected to a fault load likewise do not meet the EU definition of "standby mode." DOE did not address the "fault load" condition in the NOPR.

Upon further consideration and in response to NEMA's comment, DOE believes a ballast that is connected to a "fault load" is in active mode. In fault mode, the ballast meets all three criteria for active mode function. More specifically, the ballast is activated, connected to mains power, and providing a main function. The main function of a ballast connected to a fault load is to apply a voltage across the sockets in an attempt to start and operate a lamp if a lamp were properly installed. Thus, DOE believes active mode for fluorescent ballasts is the condition in which the ballast is providing a regulated current to a properly installed functional lamp or providing a voltage to the sockets to start and operate a lamp if a functional lamp were properly installed. The above clarifies DOE's statement in the January 2009 NOPR regarding active mode operation of fluorescent lamp ballasts.

##### 2. Standby Mode

EPCA section 325(gg)(1)(A)(iii) defines "standby mode" as "the condition in which an energy-using product—(I) is connected to a main power source; and (II) offers 1 or more of the following user-oriented or

in the docket for the fluorescent lamp ballast energy conservation standards rulemaking (Docket No. EERE-2007-BT-STD-0016, RIN: 1904-AB50).

protective functions: (aa) To facilitate the activation or deactivation of other functions (including active mode) by remote switch (including remote control), internal sensor, or timer. (bb) Continuous functions, including information or status displays (including clocks) or sensor-based functions.” (42 U.S.C. 6295(gg)(1)(A)(iii)) As described below, two key aspects of this definition are that fluorescent lamp ballasts must: (1) Be connected to a main power source, and (2) offer the activation or deactivation of other functions by remote switch or internal sensor.

To be in the “standby mode” under the EPCA definition of that term in part requires that fluorescent lamp ballasts be connected to their main power source. (42 U.S.C. 6295(gg)(1)(A)(iii)) This requirement effectively precludes the majority of ballasts from having standby mode energy consumption, because most ballasts are operated with on-off switches, motion sensors, circuit breakers, or other relays that connect main power to switch on the ballast. Once the main power source is connected to the ballast, the ballast immediately begins to provide voltage to the lamp sockets to start a lamp (if a functional lamp were properly installed) and then to provide a regulated current to a properly-installed, functional lamp. In this way, the ballast is in active mode, as discussed above. Thus, DOE finds that those ballasts that are controlled by disconnecting the main power source from the ballast never operate in standby mode.

EPCA’s definition of “standby mode” also applies to energy-using products that facilitate the activation or deactivation of other functions by remote switch, internal sensor, or timer. (42 U.S.C. 6295(gg)(1)(A)(iii)(II)(aa)) DOE interprets this condition as applying only to fluorescent lamp ballasts that are designed to operate in, or function as, a lighting control system where auxiliary control devices send signals to the ballast. An example would be a ballast that incorporates a digital addressable lighting interface (DALI). A ballast that incorporates a lighting interface like DALI (whether dimming or not) has an electronic circuit enabling the ballast to communicate with, and receive instructions from, the lighting interface. These instructions could tell the ballast to enter active mode or to adjust the light output to zero-percent output. In the latter case, the ballast no longer provides a regulated voltage and/or current to its sockets. Moreover, such ballasts are always connected to a main power source without being disconnected by an on-off switch or

other type of relay. Thus, at zero light output, the ballast is standing by, connected to a main power source while it awaits instructions from the lighting control system to provide regulated voltage and/or current to its sockets. Thus, the only fluorescent lamp ballasts DOE is aware of that meet the statutory requirements for standby mode are those ballasts that are an active component of a lighting control system. DOE did not receive any adverse comments with regard to its interpretation of “standby mode” for fluorescent ballasts. Therefore, in consideration of the above, DOE’s interpretation of standby mode remains the same as in the January 2009 NOPR. 74 FR 3450, 3453 (Jan. 21, 2009)

### 3. Off Mode

EPCA section 325(gg)(1)(A)(ii) defines “off mode” as “the condition in which an energy-using product—(I) Is connected to a main power source; and (II) is not providing any standby or active mode function.” (42 U.S.C. 6295(gg)(1)(A)(ii)) DOE considered this definition in the context of fluorescent lamp ballasts and finds that off mode does not apply to any fluorescent lamp ballast (dimmable or non-dimmable), because off mode describes a condition that commercially-available ballasts do not attain.

The definition of “off mode” requires that ballasts be connected to a main power source and not provide any standby or active mode function. (42 U.S.C. 6295(gg)(1)(A)(ii)) It is not possible for ballasts to meet these criteria, because there is no condition in which the ballast is connected to the main power source and is not in a mode already accounted for in either active mode or standby mode (as defined previously). Thus, ballasts never meet the second requirement of the EPCA definition of “off mode.” (42 U.S.C. 6295(gg)(1)(A)(ii)(II)) DOE did not receive any adverse comments with regard to its interpretation of “off mode” for fluorescent ballasts. Therefore, DOE’s interpretation of “off mode” remains the same as in the January 2009 NOPR: that off mode is not applicable to fluorescent lamp ballasts. 74 FR 3450, 3453–54 (Jan. 21, 2009). Should circumstances change, DOE may revisit this interpretation and propose a test method for measuring off mode in fluorescent lamp ballasts.

### B. Scope of Applicability

#### 1. Types of Ballasts Covered

According to the definition set forth in 42 U.S.C. 6291(29)(A), “[t]he term ‘fluorescent lamp ballast’ means a

device which is used to start and operate fluorescent lamps by providing a starting voltage and current and limiting the current during normal operation.” This definition indicates that DOE’s coverage authority for this test procedure extends to many types of ballasts that are not covered by standards prescribed by EPCA, such as dimming ballasts. (42 U.S.C. 6295(g)(6); 42 U.S.C. 6295(g)(8)(C)) As discussed in section III.A.2 of this final rule, however, DOE considers standby mode as only applying to ballasts that incorporate some kind of lighting control system interface; DOE believes these ballasts are the only ones that currently satisfy the EPCA definition of “standby mode.” (42 U.S.C. 6295(gg)(1)(A)(iii)) These ballasts are designed with circuitry that adds features, including intelligent operation. As discussed in section III.A.2, one example of these ballasts would be a DALI-enabled ballast. DALI-enabled ballasts have internal circuitry that is fundamentally part of the ballast design that remains active and consumes energy, even when the ballast is not operating any lamps. DOE is unaware of any other types of ballasts that would perform standby mode functions.

In summary, although this test procedure applies to any “fluorescent lamp ballast” as defined in section 321 of EPCA (42 U.S.C. 6291(29)(A)), most ballasts would not be subject to the provisions pertaining to standby mode because they do not operate in the standby mode. DOE finds that the ballasts subject to standby mode power measurements would be those that incorporate some electronic circuit enabling the ballast to communicate with and be part of a lighting control system. Such ballasts could include both dimming ballasts and non-dimming ballasts. DOE did not receive any adverse comments with regard to its interpretation of the types of ballast covered by the standby mode test procedure provisions.

#### 2. Relationship to Other Rulemakings

DOE is conducting two additional rulemakings on fluorescent lamp ballasts. As previously mentioned, DOE initiated a ballast standards rulemaking in January 2008, which will evaluate whether to amend the energy conservation standards in place for fluorescent lamp ballasts, including whether to add standby mode requirements. In that rulemaking process, DOE is also considering extending coverage and standards to additional fluorescent lamp ballasts, such as dimming ballasts. NEMA commented that this fluorescent lamp

ballast standby mode test procedure rulemaking may slow the market's adoption of dimming ballasts, which allow consumers to reduce light output and save energy. (NEMA, Public Meeting Transcript, No. 24 at pp. 34–35) DOE agrees that the majority of ballasts with a lighting control interface currently are dimming ballasts. Nevertheless, DOE notes that it is required by law to create a test procedure for fluorescent lamp ballasts in standby mode. (42 U.S.C. 6295(gg)(2)(A)) Furthermore, EPCA requires DOE to consider standby mode and off mode for all energy conservation standard final rules issued after July 1, 2010. (42 U.S.C. 6295(gg)(3)(A)) Because the final energy conservation standard rule for fluorescent lamp ballasts is scheduled to be issued in June 2011 (*i.e.*, after July 1, 2010), DOE must consider amending the standard to address standby mode during that rulemaking. DOE will carefully consider NEMA's comment regarding potential impacts on market adoption of dimming ballasts in the rulemaking amending the energy conservation standard to address standby mode energy consumption.

The second rulemaking is a test procedure rulemaking concerning fluorescent lamp ballast active mode energy consumption, in which DOE will consider updating the references to industry standards (found in appendix Q to subpart B of 10 CFR part 430) to current versions of the industry standards. EPCA requires that test procedures must be “in accord with ANSI standard C82.2–1984 or other test procedures determined appropriate by the Secretary.” (42 U.S.C. 6293(b)(5)) Because the industry testing standard ANSI Standard C82.2 was revised in the year 2002, DOE is adopting ANSI Standard C82.2–2002 for measuring standby power for the test procedure amendments prescribed in this final rule. DOE notes that this will result in standby mode power measurement requirements that are different, at present, from those in the current active mode power test procedure, which references ANSI Standard C82.2–1984. However, DOE further notes that use of the standby mode provisions of the fluorescent lamp ballast test procedures is not required until the compliance date of an amended energy conservation standard that addresses standby mode operation, thereby further minimizing the impacts of referencing two different versions of the same ANSI standard.

### C. Approach

#### 1. Overview of Test Procedure

EPCA section 325(gg)(2)(A) in part directs DOE to establish test procedures to include standby mode, “taking into consideration the most current versions of Standards 62301 and 62087 of the International Electrotechnical Commission \* \* \*” (42 U.S.C. 6295(gg)(2)(A)) IEC Standard 62087 applies only to audio, video, and related equipment, but not to lighting equipment. Thus, IEC Standard 62087 does not apply to this rulemaking, so DOE developed today's final rule consistent with procedures outlined in IEC Standard 62301, which applies generally to household electrical appliances. To develop a test method that would be familiar to fluorescent lamp ballast manufacturers, DOE referenced language and methodologies presented in ANSI Standard C82.2–2002, “For Lamp Ballasts—Method of Measurement of Fluorescent Lamp Ballasts.”

Today's final rule test procedure for measuring standby mode energy consumption consists of the following steps: (1) A signal is sent to the ballast instructing it to reduce light output to zero percent; (2) the main input power to the ballast is measured; and (3) the power from the control signal path is measured in one or more of three ways, depending on how the signal from the control system is delivered to the ballast.

In sections III.C.2 through III.C.4, DOE discusses the amendments to section 1 of appendix Q to subpart B of 10 CFR part 430 (hereafter, “appendix Q”).

#### 2. Definitions

Section 1 of appendix Q provides definitions for terms used in the test procedure for fluorescent lamp ballasts. DOE is inserting five new terms to define terminology used in the test procedure amendments being adopted today: (1) AC control signal; (2) DC control signal; (3) PLC control signal; (4) standby power; and (5) wireless control signal. These new terms support the sections of the test procedure that address the measurement of control signal power to fluorescent lamp ballasts operating in standby mode. In addition, DOE is listing the terms in appendix Q alphabetically. The following text describes the origin of the five new terms. DOE did not receive any adverse comments with regard to the definitions proposed in the NOPR. Although DOE proposed in the NOPR to include a definition for “ANSI Standard C82.2–2002” in appendix Q, in this final rule, DOE has decided to provide

details regarding this incorporation by reference in 10 CFR 430.3, consistent with the formatting of other industry standards incorporated by reference.

The definition for “AC control signal” states that it is “an alternating current (AC) signal that is supplied to the ballast using additional wiring for the purpose of controlling the ballast and putting the ballast in standby mode.” Some lighting control systems operate by communicating with the ballasts over a separate wiring system using an AC voltage. Neither IEC Standard 62301 nor ANSI Standard C82.2–2002 define “AC control signal.” Therefore, DOE drafted the above definition of the term “AC control signal” to enhance the clarity and understanding of its test procedure—specifically that an AC control signal is a signal supplied to the ballast over a discrete wiring system for the purpose of ballast control. In today's test procedure final rule, DOE is requiring that the fluorescent lamp ballast's AC control signal power be measured through the control signal wiring system.

The definition of “DC control signal” states that it is “a direct current (DC) signal that is supplied to the ballast using additional wiring for the purpose of controlling the ballast and putting the ballast in standby mode.” Some lighting control systems operate by communicating with the ballasts over a separate wiring system using DC voltage. DOE was unable to locate a definition for the term “DC control signal” in IEC Standard 62301 or ANSI Standard C82.2–2002. Therefore, DOE drafted the above definition of a “DC control signal” to enhance the clarity and understanding of its test procedure—specifically, that a DC control signal is a signal supplied to the ballast over a discrete wiring system for the purpose of ballast control. In today's test procedure final rule, DOE is requiring that the fluorescent lamp ballast's DC control signal power must be measured through the control signal wiring system.

The definition of “PLC control signal” states that it is “a power line carrier (PLC) signal that is supplied to the ballast using the input ballast wiring for the purpose of controlling the ballast and putting the ballast in standby mode.” Some lighting control systems operate by communicating with the ballasts over the existing power lines that constitute the main power connection. DOE was unable to locate a definition for the term “PLC control signal” in IEC Standard 62301 or ANSI Standard C82.2–2002. Therefore, DOE drafted the above definition of a “PLC control signal” to enhance the clarity

and understanding of its test procedure—specifically, that a PLC control signal is a signal supplied to the ballast over the ballast's input power wiring for the purpose of controlling the ballast. In today's test procedure final rule, DOE is requiring that the fluorescent lamp ballast's PLC control signal power must be measured through the ballast input power wiring.

The definition of "standby mode" was provided in EPCA section 325(gg)(1)(A)(iii). (42 U.S.C. 6295(gg)(1)(A)(iii)) In today's final rule, DOE has decided to incorporate this EPCA definition into appendix Q.

The definition of "wireless control signal" states that it is "a wireless signal that is radiated to and received by the ballast for the purpose of controlling the ballast and putting the ballast in standby mode." Some lighting control systems operate by communicating with the ballasts over a wireless system, much like a wireless computer network. DOE was unable to locate a definition for the term "wireless control signal" in IEC Standard 62301 or ANSI Standard C82.2–2002. Therefore, DOE drafted the above definition of a "wireless control signal" to enhance the clarity and understanding of its test procedure—specifically, that a wireless control signal is a signal radiated from the lighting control system to the ballast for the purpose of controlling the ballast.

### 3. Test Conditions

Section 2 of appendix Q provides the required test conditions for measuring the performance of fluorescent lamp ballasts. DOE is modifying section 2 to establish new test conditions only for the measurement of standby mode energy consumption. This will not affect the existing test conditions required for measuring the ballast efficacy factor in the current fluorescent lamp ballast test procedure. Section 2 is now subdivided into two subsections, 2.1 and 2.2. Subsection 2.1 contains the same requirements previously in section 2, based on the test conditions contained in ANSI Standard C82.2–1984, for the purpose of measuring the ballast efficacy factor in active mode. Subsection 2.2 is structured in the same way as subsection 2.1; however, it is for the purpose of measuring energy consumed in standby mode, and the test conditions are based on ANSI Standard C82.2–2002. DOE acknowledges that the ANSI standards referenced in subsections 2.1 and 2.2 differ in areas related to the interference of testing instrumentation. Specifically, DOE believes the input power measurement of ANSI Standard C82.2–2002 reduces the interference of instrumentation on

the input power measurement as compared to ANSI Standard C82.2–1984. However, DOE also believes that because modern instrumentation does not significantly interfere with input power measurements, the differences between the input power measurements of the two test procedures are negligible. To address this difference and any other differences between the two ANSI standards, DOE will conduct a separate test procedure rulemaking on the existing (active mode) fluorescent lamp ballast test procedure; in that rulemaking, DOE will evaluate and consider updating the referenced ANSI standard in subsection 2.1. DOE will also evaluate and consider combining subsections 2.1 and 2.2 into one section.

The standby mode test procedure proposed by DOE in the January 2009 NOPR refers the reader to sections 5, 7, and 8 of ANSI Standard C82.2–2002 for all test conditions. These sections of the ANSI standard describe requirements for ballast electrical supply characteristics, test measurement circuits, and measurement instruments. The standard does not discuss configuration requirements for ballasts that can connect to control devices (sensors) or ballasts that can interface with circuitry for multiple types of control signals. NEMA commented that fluorescent lamp ballasts that can connect to control sensors do not represent the typical ballast configuration in a lighting system, and that the standby power of such ballasts should be measured with all control sensors disconnected from the ballast. (NEMA, No. 27 at p. 3) DOE acknowledges that the typical ballast installed in a lighting system may not have connections to control sensors and that a standby power measurement of a ballast with such devices attached will incorporate any energy that the ballast provides to these control sensors. DOE, however, interprets section 310(3) of EISA 2007 (42 U.S.C. 6295(gg)(2)) as requiring the establishment of a standby mode test procedure for all fluorescent lamp ballasts to which standby mode applies, because the statute does not limit coverage to only typical ballasts in lighting systems. Therefore, DOE is amending the fluorescent lamp ballast test procedure to cover ballasts in both typical and atypical configurations. Thus, DOE has added configuration requirements to section 2.2 of the test procedure, which now states that "[f]luorescent lamp ballasts that are capable of connections to control devices shall be tested with all commercially available compatible control devices connected in all

configurations supported by manufacturer literature. For each configuration, a separate measurement of standby power shall be made in accordance with section 3.5 of the test procedure." DOE believes that this revision enables the prescribed test procedure to characterize the maximum energy consumption of any fluorescent lamp ballast that features a standby mode.

DOE is also correcting the acronym used in existing section 2 for the American National Standard Institute, which is shown as "ANIS" instead of "ANSI." For clarity and also for consistency with other parts of the statute, DOE has also added two references to section 430.3 titled "Materials incorporated by reference" for information on obtaining ANSI Standard C82.2–1984 and ANSI Standard C82.2–2002. DOE notes that ANSI Standard C82.2–1984 is referenced by section 2.1 of the prescribed test procedure, while section 2.2 of the test procedure references ANSI Standard C82.2–2002. For clarity, all of section 2.1 is shown in this final rule notice as adopted new language, although the only actual changes to section 2.1 are the acronym correction, the reference to section 430.3, and the addition of a sentence that reads, "The test conditions described in this subsection (2.1) are applicable to subsections 3.3 and 3.4 of section 3, Test Method and Measurements."

### 4. Test Method and Measurements

Section 3 of appendix Q provides the test method and measurements associated with the fluorescent lamp ballast test procedure. This section references requirements for instrumentation and all the steps a technician must follow when measuring ballast performance. In today's final rule, DOE is not changing any of the existing requirements or steps associated with testing for determining the ballast efficacy factor. Instead, DOE is adding new steps at the end of section 3 that describe the procedure that must be followed for measuring energy consumed during ballast operation in standby mode.

In subsection 3.1, DOE is adding a new sentence: "The test for measuring standby mode energy consumption of fluorescent lamp ballasts shall be done in accordance with ANSI Standard C82.2–2002." DOE notes that the first sentence in subsection 3.1 states, "The test method for testing fluorescent lamp ballasts shall be done in accordance with ANSI Standard C82.2–1984." These two sentences in subsection 3.1 prescribed by this final rule create a

bifurcated test setup, requiring technicians to conduct the active mode testing on a fluorescent lamp ballast using conditions in ANSI Standard C82.2–1984 and then to test standby mode energy consumption using conditions in ANSI Standard C82.2–2002. However, DOE intends to initiate another fluorescent lamp ballast test procedure rulemaking that would consider the usage of one standard for all fluorescent lamp ballast energy consumption testing, for consistency and clarity. While today's test procedure will become effective 30 days after publication of this final rule, manufacturers will not be required to use the standby provisions of this test procedure to demonstrate compliance with the energy conservation standards for fluorescent lamp ballasts unless and until DOE amends the energy conservation standards to address standby mode energy consumption in a subsequent final rule which is scheduled to be completed in 2011, as explained in the January 2008 Framework Document for that rulemaking. 73 FR 3653, 3654 (Jan. 22, 2008). However, DOE notes that any representation regarding fluorescent lamp ballast standby mode energy use (such as in manufacturer marketing literature) must be based on the test procedure prescribed in this final rule after it becomes effective. DOE is currently unaware, however, of any manufacturer making such representations. Thus, DOE believes that the test procedure in itself will have little (if any) impact on manufacturers unless and until DOE establishes efficiency standards in the fluorescent ballast standards final rule.

In subsection 3.5, DOE has inserted the test method for measuring standby mode power. In this subsection, DOE directs the technician to send a signal to the ballast under test, instructing the ballast to have zero light output using the appropriate ballast communication protocol or system for that ballast. Next, the technician must measure the input power (in watts) to the ballast in accordance with ANSI Standard C82.2–2002. Finally, the technician measures the control signal power from the ballast control signal path using methods for all of the following signal path types that are applicable to the ballast: (1) An AC control signal path; (2) a DC control signal path; or (3) a power line carrier (PLC) control signal path, depending on the type of path or paths that the ballast employs.

The measurement of input power to the ballast from the main electricity supply is based on the approach in ANSI Standard C82.2–2002, section 13.

This measurement parallels the approach DOE followed in subsection 3.3.1 of the existing test procedure for fluorescent lamp ballasts, in which technicians are directed to measure the input power (watts) to the ballast in accordance with ANSI Standard C82.2–1984, section 3.2.1(3) and section 4. The requirements of ANSI Standard C82.2–1984 have been combined into section 13 in ANSI Standard C82.2–2002. Thus, the test measurements of ballast input power are required to be done in accordance with the appropriate sections of the industry test method.

NEMA commented on the measurement equipment in the ballast input power measurement method proposed in the January 2009 NOPR. NEMA expressed concern that the test procedure and a schematic shown at the public meeting could be interpreted as requiring the determination of input power to a ballast by separate measurements of voltage and current. NEMA requested clarification of the roles of the ammeter and volt-meter in the measurement of input power. (NEMA, No. 27 at p. 2) In response, DOE notes that the test procedure does not require the separate measurement of input power current and voltage. To clarify the test procedure measurement method, DOE has inserted revised schematics into sections 3.5.2, 3.5.3.1, and 3.5.3.3 of the test procedure that are based on the schematic shown in Figure 2 of section 7 in ANSI C82.2–2002. This figure indicates the presence of a power analyzer with internal wattage, voltage, and current measurement devices connected as shown in the schematic.

In subsection 3.5.3 of today's test procedure final rule, DOE requires a measurement of control signal power. DOE is aware of four possible ways to deliver a control signal to a fluorescent lamp ballast: (1) A dedicated AC control signal wire; (2) a dedicated DC control signal wire; (3) a PLC control signal over the main supply input wires; and (4) a wireless control signal. The test procedure requires measurement of the lighting control signal power and lists three methods for measuring that power, depending on which type of lighting control signal is used. DOE incorporates three circuit diagrams in sections 3.5.3.1, 3.5.3.2, and 3.5.3.3 to clearly present the method of measurement for each type of control system communication protocol.

The test procedure proposed in the January 2009 NOPR characterized fluorescent lamp ballasts featuring standby mode that utilized one type of control signal connection. It is technically feasible for a ballast to feature more than one type of control

signal connection. For this final rule, DOE has revised section 3.5.3 of the test procedure to indicate that “[t]he power from the control signal path will be measured using all applicable methods described” in sections 3.5.3.1 through 3.5.3.4 of the test procedure so that the procedure is capable of determining the maximum energy consumption of a fluorescent lamp ballast in standby mode.

As to the fourth approach, DOE estimates that the power supplied to a ballast using a wireless signal is well below 1.0 watt. NEMA agreed that for wireless control signals, the majority of the receiver power would be generated in the ballast, rather than being carried wirelessly to the ballast. (NEMA, Public Meeting Transcript, No. 24 at p. 28) DOE has excluded from the test procedure a measurement of wireless signal power for these reasons.

DOE received three other comments from interested parties on the measurement of control signal power. First, NEMA stated that equipment used to measure PLC power must be capable of measuring the appropriate frequencies, as the power distributed over the input ballast wiring would also include the PLC power. (NEMA, No. 27 at p. 2) DOE agrees with this comment and notes that section 3.5.3.3 of the test procedure requires the usage of a wattmeter of “a frequency response that is at least 10 times higher than the PLC being measured” in conjunction with a high-pass filter “to filter out power at 60 Hertz.” DOE believes that a high-pass-filtered wattmeter with such a frequency response will accurately measure the PLC signal; thus, DOE has made no change to the wattmeter requirements for PLC measurement in this final rule.

Second, the People's Republic of China (“P.R. China”) commented that DOE did not consider issues with electromagnetic compatibility (EMC) associated with the PLC signal in the January 2009 NOPR. P.R. China is concerned that electromagnetic interference from the PLC signal could significantly affect the measurement of standby power. (P.R. China, No. 26 at p. 2) DOE understands that if the PLC signal were a very high-frequency signal (e.g., with a frequency in the megahertz (MHz) range), then the electromagnetic interference from the signal would affect the standby power measurement significantly (i.e., cause variances in the input power measurement by more than one watt). However, PLC signals to fluorescent ballasts are on the order of 20 kilohertz (kHz). According to industry experts, any variance in the input power due to electromagnetic interference at frequencies of this



magnitude are insignificant (*i.e.*, variance would be much less than a watt). In fact, the Federal Communications Commission only regulates PLC measurements from 150 kHz to 30 MHz so that conducted emissions in this frequency range do not interfere with nearby radio receivers. (47 CFR 15 Subpart B) Accordingly, DOE has determined that shielding PLC measurements from electromagnetic interference for ballasts is unnecessary. As a result, DOE has not modified the test procedure to include shielding in today's final rule.

Third, NEMA commented on the intent of the circuit diagrams in sections 3.5.3.1, 3.5.3.2, and 3.5.3.3 of the test procedure regarding the measurement of control signal power. NEMA expressed concern that it is not clear that the intent of the circuit diagrams in sections 3.5.3.1, 3.5.3.2, and 3.5.3.3 is to measure only the control signal power to the ballast as opposed to the control system. (NEMA, Public Meeting Transcript, No. 24 at pp. 21–23) DOE believes that the intent of the diagrams (that only the control signal to the ballast should be measured) is clear, as they are similar to diagrams measuring the ballast input power in ANSI Standard C82.2–2002. Therefore, DOE has decided not to modify the circuit diagrams further for today's final rule.

NEMA also commented on the measurement of ballast input power and control signal power for ballasts that feature control signal device power supplies. NEMA commented that the measurement method proposed in the January 2009 NOPR is inappropriate for ballasts that use control devices powered by the ballast itself (*i.e.*, the power supply for the control sensors is built into the ballast), as the test procedure would measure the energy consumed by the control sensor power supply when the ballast is in standby mode. NEMA recommended that the ballast input power measurement method should apply only when the control device power supply is external to the ballast. NEMA commented that the proposed method would limit innovation by encouraging system designers to use control signal device power supplies separate from ballasts. (NEMA, No. 27 at p. 3) DOE agrees that the measurement method would measure the energy consumed by any control sensor power supply internal to a ballast when the ballast is in standby mode. The typical ballast in a lighting system may not have such power supplies; however, as explained previously, DOE interprets section 310(3) of EISA 2007 (42 U.S.C. 6295(gg)(2)) as requiring the

establishment of a standby mode test procedure for all fluorescent lamp ballasts that feature a standby mode, not only typical ballasts in lighting systems. It also would be burdensome to measure the energy consumed only by the elements of a ballast that are not related to the distribution of energy to control sensors, as such measurement would likely require the dismantling of a ballast. DOE will consider the impacts of fluorescent lamp ballast standby mode energy conservation standards on utility, consumers, the Nation, and other elements in the ballast standards rulemaking.

NEMA also suggested that the standby power of fluorescent lamp ballasts with internal control device power supplies should be determined solely by the input power measurement method. (NEMA, No. 27 at p. 3) DOE disagrees that only the input power measurement should be used for ballasts that feature control signal device power supplies. Because DOE's interest is energy savings for consumers and the Nation, DOE wishes to produce a test procedure that can determine the maximum energy consumption of a fluorescent lamp ballast in standby mode. This requires a measurement of ballast input power as well as control signal power of any control signal types that a ballast supports, regardless of whether the ballast features a control signal device power supply. Therefore, DOE has retained the test procedure's required measurements of control signal power and input power of a fluorescent lamp ballast in standby mode for this final rule.

#### 5. Test Procedure Measurements and Burden

The fluorescent lamp ballast standby mode energy consumption test procedure prescribed in this final rule is consistent with IEC Standard 62301 and follows testing approaches used in ANSI Standard C82.2–2002. The procedure requires measurements of the input power of the ballast in standby mode and the control signal power of the ballast in standby mode, including measurements for all applicable control signal types and all manufacturer-supported configurations of control sensors connected to the ballast (according to manufacturer literature). DOE acknowledges that it does not indicate how to combine these measured values or use them in equations. DOE believes, however, that these measurements of standby mode power consumption will be necessary for the development of future energy conservation standards for fluorescent

lamp ballasts, and such issues will be addressed at that time, as necessary.

The test procedure prescribed in this final rule, as required by EPCA section 325(gg), is designed to produce results that measure power consumption in an accurate and repeatable manner, and should not be unduly burdensome on manufacturers to conduct, because it requires only one additional measurement using a test setup that is already commonly used in the industry for measuring ballast power consumption. Manufacturers are not currently required to measure standby mode power in order to determine compliance with energy conservation standards for fluorescent lamp ballasts, as the current energy conservation standards for such ballasts do not include a standby mode energy consumption requirement. However, DOE notes that any representation regarding fluorescent lamp ballast standby mode energy use (such as in manufacturer marketing literature) must be based on the test procedure prescribed in this final rule once it becomes effective. DOE is currently unaware, however, of any manufacturer making such representations. For these two reasons, DOE believes that today's test procedure amendments will have little (if any) impact on manufacturers unless and until DOE adopts fluorescent lamp ballast energy conservation standards that include standby mode energy consumption requirements. In addition, if DOE adopts such requirements, DOE believes that the test procedure adopted in this final rule would not be unduly burdensome. The amended test procedures requires a technician to make one additional measurement using a test setup that is already commonly used in the industry for measuring active mode ballast energy consumption. In addition, as stated in today's final rule, standby mode only applies to a very small subset of fluorescent lamp ballasts (*i.e.*, those enabled to operate on lighting control systems), and, therefore, the vast majority of ballasts sold would not be affected by today's amendments.

Concerning test procedure burden, NEMA commented that the test procedure proposed by DOE in the January 2009 NOPR adds workload to manufacturers for little or no benefit because DALI ballasts account for approximately 0.15 percent of ballast sales in the United States and are expected to remain low in sales volume over the next 5 years. (NEMA, No. 27 at p. 3) DOE is aware that the test procedure may add some incremental degree of burden to manufacturers. However, this rulemaking addresses the



creation of a test procedure for fluorescent lamp ballasts in standby mode, as required by section 310(3) of EISA 2007. (42 U.S.C. 6295(gg)(2)) The benefits of energy conservation standards will be characterized and quantified in the ballast standards rulemaking. For these reasons, DOE has continued with the creation of a test procedure for fluorescent lamp ballasts in standby mode. DOE has determined that the test procedure adopted in today's rulemaking is not unduly burdensome to conduct, as required by EPCA and discussed above. (42 U.S.C. 6293(b)(3))

#### IV. Regulatory Review

##### A. Executive Order 12866

Today's regulatory action is not a "significant regulatory action" under section 3(f) of Executive Order 12866, "Regulatory Planning and Review," 58 FR 51735 (Oct. 4, 1993). Accordingly, this action was not subject to review under that Executive Order by the Office of Information and Regulatory Affairs (OIRA) of the Office of Management and Budget (OMB).

##### B. National Environmental Policy Act

In this final rule, DOE is adopting the test procedure amendments that it expects will be used to develop and implement future energy conservation standards for fluorescent lamp ballasts. DOE has determined that this rule is covered under a class of actions categorically excluded from review under the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321 *et seq.*, and DOE's implementing regulations at 10 CFR part 1021. This rule amends an existing rule without changing its environmental effect, and, therefore, is covered by the Categorical Exclusion A5 found in appendix A to subpart D, 10 CFR part 1021. Accordingly, neither an environmental assessment nor an environmental impact statement is required.

##### C. Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of an initial regulatory flexibility analysis for any rule that 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. As required by Executive Order 13272, "Proper Consideration of Small Entities in Agency Rulemaking," 67 FR 53461 (August 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential

impacts of its rules on small entities are properly considered during the DOE rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the DOE Office of the General Counsel's Web site (<http://www.gc.doe.gov>).

DOE reviewed today's final rule under the provisions of the Regulatory Flexibility Act and the policies and procedures published on February 19, 2003. DOE certified in the January 2009 NOPR that the proposed rule would not have a significant impact on a substantial number of small entities. 74 FR 3450, 3457 (Jan. 21, 2009). As part of this rulemaking, DOE examined the existing compliance costs manufacturers already bear and compared them to the revised compliance costs, based on the proposed revisions to the test procedure. While it is true that manufacturers making any public representation of the standby power consumption of their ballasts would be required to use this test procedure, DOE does not find that the burden imposed by the revisions in this document would result in any significant increase in testing or compliance costs. Rather, the technician is required to make one additional measurement using a test setup that is already commonly used in the industry for measuring ballast power consumption. In addition, as stated in today's final rule, standby mode only applies to a very small subset of fluorescent lamp ballasts (*i.e.*, those enabled to operate on lighting control systems), and, therefore, the vast majority of ballasts sold would not be affected by today's test procedure amendments. Accordingly, DOE has not prepared a regulatory flexibility analysis for this rulemaking. DOE's certification and supporting statement of factual basis are provided again in this notice to the Chief Counsel for Advocacy of the Small Business Administration pursuant to 5 U.S.C. 605(b).

DOE did not receive any comments addressing small business impacts for manufacturers of fluorescent lamp ballasts. Thus, DOE reaffirms and certifies that this rule will have no significant economic impact on a substantial number of small entities.

##### D. Paperwork Reduction Act

This rule contains a collection-of-information requirement subject to the Paperwork Reduction Act (PRA) which has been approved by OMB under control number 1910-1400. Public reporting burden for compliance reporting for energy and water conservation standards is estimated to average 30 hours per response, including the time for reviewing

instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate, or any other aspect of this data collection, including suggestions for reducing the burden, to DOE (*see ADDRESSES*) and by e-mail to [Christine.J.\\_Kymn@omb.eop.gov](mailto:Christine.J._Kymn@omb.eop.gov).

Notwithstanding any other provision of the law, no person is required to respond to, nor shall any person be subject to a penalty for failure to comply with, a collection of information subject to the requirements of the PRA, unless that collection of information displays a currently valid OMB Control Number.

##### E. Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4; UMRA) requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. Subsection 101(5) of title I of that law defines a Federal intergovernmental mandate to include any regulation that would impose on State, local, or Tribal governments an enforceable duty, except a condition of Federal assistance or a duty arising from participating in a voluntary Federal program. For proposed regulatory actions likely to result in a rule that may cause expenditures by State, local, and Tribal governments, in the aggregate, or by the private sector of \$100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires Federal agencies to publish estimates of the resulting costs, benefits, and other effects on the national economy (2 U.S.C. 1532(a), (b)). UMRA also requires Federal agencies to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a proposed "significant intergovernmental mandate." UMRA also requires an agency plan for giving notice and opportunity for timely input to small governments that may be affected before establishing a requirement that might significantly or uniquely affect them. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. (This policy is also available at <http://www.gc.doe.gov>.) Today's final rule contains neither an intergovernmental mandate, nor a mandate that may result in the expenditure of \$100 million or more in any year. Accordingly, no further assessment or analysis is required under

the Unfunded Mandates Reform Act of 1995.

*F. Treasury and General Government Appropriations Act, 1999*

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. 105–277; 5 U.S.C. 601 note) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. Today's rule would not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is unnecessary to prepare a Family Policymaking Assessment.

*G. Executive Order 13132*

Executive Order 13132, "Federalism," 64 FR 43255 (August 10, 1999) imposes certain requirements on agencies formulating and implementing policies or regulations that preempt State law or that have Federalism implications. The Executive Order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and to carefully assess the necessity for such actions. The Executive Order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have Federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE has examined this final rule and has determined that it would not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Accordingly, no further action is required under Executive Order 13132.

*H. Executive Order 12988*

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 (Feb. 7, 1996) imposes on Federal agencies the general duty to adhere to the following requirements: (1) Eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; (3) provide a clear legal standard for affected conduct rather than a general standard; and (4) promote simplification and burden reduction. Section 3(b) of Executive Order 12988 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 Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in sections 3(a) and 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this rule meets the relevant standards of Executive Order 12988.

*I. Treasury and General Government Appropriations Act, 2001*

Section 515 of the Treasury and General Government Appropriations Act, 2001 (Pub. L. 106–554; 44 U.S.C. 3516 note) provides for agencies to review most disseminations of information to the public under guidelines established by each agency pursuant to general guidelines issued by OMB. OMB's guidelines were published at 67 FR 8452 (Feb. 22, 2002), and DOE's guidelines were published at 67 FR 62446 (Oct. 7, 2002). DOE has reviewed today's rule under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

*J. Executive Order 13211*

Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," 66 FR 28355 (May 22, 2001) requires Federal agencies to prepare and submit to OMB, a Statement of Energy Effects for any proposed significant energy action. A "significant energy action" is defined as any action by an agency that promulgates or is expected to lead to promulgation of a final rule, and that: (1) Is a significant regulatory action under Executive Order 12866, or any successor order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy; or (3) is designated by the Administrator of OIRA as a significant energy action. For any proposed significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use

should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use. Today's regulatory action is not a significant regulatory action under Executive Order 12866. Moreover, it would not have a significant adverse effect on the supply, distribution, or use of energy. It has likewise not been designated by the Administrator of OIRA as a significant energy action. Therefore, it is not a significant energy action, and, accordingly, DOE has not prepared a Statement of Energy Effects.

*K. Executive Order 12630*

Pursuant to Executive Order 12630, "Governmental Actions and Interference with Constitutionally Protected Property Rights," 53 FR 8859 (March 15, 1988), DOE has determined that this rule would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

*L. Section 32 of the Federal Energy Administration Act of 1974*

Under section 301 of the Department of Energy Organization Act (Pub. L. 95–91; 42 U.S.C. 7101), DOE must comply with section 32 of the Federal Energy Administration Act of 1974, as amended by the Federal Energy Administration Authorization Act of 1977 (15 U.S.C. 788; FEAA). Section 32 essentially provides in part that, where a proposed rule authorizes or requires use of commercial standards, the notice of proposed rulemaking must inform the public of the use and background of such standards. In addition, section 32(c) requires DOE to consult with the Attorney General and the Chairman of the Federal Trade Commission (FTC) concerning the impact of the commercial or industry standards on competition.

Today's final rule incorporates testing methods contained in the following commercial standards: ANSI Standard C82.2–1984, "American National Standard for Fluorescent Lamp Ballasts—Method of Measurement, 1984," and ANSI Standard C82.2–2002, "American National Standard for Lamp Ballasts—Method of Measurement of Fluorescent Lamp Ballasts, 2002." The Department has evaluated these standards and is unable to conclude whether they fully comply with the requirements of section 32(b) of the FEAA, (i.e., that they were developed in a manner that fully provides for public participation, comment, and review). 74 FR 3450, 3459 (Jan. 21, 2009). DOE has consulted with the Attorney General and the Chairman of the FTC

concerning the impact on competition of requiring manufacturers to use the test methods contained in these standards, and neither recommended against incorporation of these standards.

#### M. Congressional Notification

As required by 5 U.S.C. 801, DOE will report to Congress on the promulgation of today's rule before its effective date. The report will state that it has been determined that the rule is not a "major rule" as defined by 5 U.S.C. 801(2).

#### V. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this final rule.

#### List of Subjects in 10 CFR Part 430

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Incorporation by reference, Intergovernmental relations, Small businesses.

Issued in Washington, DC, on September 17, 2009.

Cathy Zoi,

Assistant Secretary, Energy Efficiency and Renewable Energy.

■ For the reasons stated in the preamble, part 430 of Chapter II of Title 10, Code of Federal Regulations, is amended as set forth below:

#### PART 430—ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

■ 1. The authority citation for part 430 continues to read as follows:

**Authority:** 42 U.S.C. 6291–6309; 28 U.S.C. 2461 note.

■ 2. Section 430.3 is amended by:

■ a. Redesignating paragraph (c)(12) as (c)(13);

■ b. Adding a new paragraph (c)(12);

■ c. Redesignating paragraphs (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), and (n) as (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), and (o) respectively; and

■ d. Adding a new paragraph (d).

The additions read as follows:

#### § 430.3 Materials incorporated by reference.

\* \* \* \* \*

(c) \* \* \*

(12) ANSI Standard C82.2–2002, Revision of ANSI C82.2–1994 (R1995), American National Standard for Lamp Ballasts—Method of Measurement of Fluorescent Lamp Ballasts, approved June 6, 2002, IBR approved for Appendix Q to Subpart B.

\* \* \* \* \*

(d) *ANSI Reseller*. Global Engineering Documents, 15 Inverness Way, East Englewood, CO 80112, Phone: 800.854.7179 or 303.397.7956, <http://www.global.ihs.com>, E-mail: [global@ihs.com](mailto:global@ihs.com). DOE does not endorse any particular reseller and notes that other resellers may also have the superseded standard for sale. Consult <http://webstore.ansi.org/> for more information on additional resellers.

(1) ANSI C82.2–1984, Revision of ANSI C82.2–1977, American National Standard for Fluorescent Lamp Ballasts—Method of Measurement, approved October 21, 1983, IBR approved for Appendix Q to Subpart B.

(2) [Reserved].

\* \* \* \* \*

■ 3. Section 430.23 is amended by redesignating paragraph (q)(4) as paragraph (q)(5) and adding a new paragraph (q)(4) to read as follows:

#### § 430.23 Test procedures for the measurement of energy and water consumption.

\* \* \* \* \*

(q) *Fluorescent Lamp Ballasts*. \* \* \*

(4) Standby power consumption of certain fluorescent lamp ballasts shall be measured in accordance with section 3.5 of appendix Q to Subpart B of Part 430.

\* \* \* \* \*

■ 4. Appendix Q to Subpart B of Part 430 is amended by:

■ a. Redesignating paragraphs 1.12 through 1.16 as paragraphs 1.15 through 1.19; paragraphs 1.3 through 1.11 as paragraphs 1.5 through 1.13; and paragraphs 1.1 and 1.2 as paragraphs 1.2 and 1.3, respectively.

■ b. Removing from redesignated paragraphs 1.5 through 1.10, and redesignated paragraphs 1.15 through 1.17, and paragraphs 3.2, 3.31, 3.3.2, 3.3.3, 3.4.1 and 3.4.2, "S(s)tandard" after the word "ANSI" and adding "(incorporated by reference; see § 430.3)" before the period at the end of each paragraph.

■ c. Adding new paragraphs 1.1, 1.4, 1.14, 1.20 and 3.5

■ d. Revising redesignated paragraph 1.19 and paragraphs 2 and 3.1.

These revisions and additions read as follows:

#### Appendix Q to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Fluorescent Lamp Ballasts

##### 1. Definitions

1.1 *AC control signal* means an alternating current (AC) signal that is supplied to the ballast using additional wiring for the purpose of controlling the

ballast and putting the ballast in standby mode.

\* \* \* \* \*

1.4 *DC control signal* means a direct current (DC) signal that is supplied to the ballast using additional wiring for the purpose of controlling the ballast and putting the ballast in standby mode.

\* \* \* \* \*

1.14 *PLC control signal* means a power line carrier (PLC) signal that is supplied to the ballast using the input ballast wiring for the purpose of controlling the ballast and putting the ballast in standby mode.

\* \* \* \* \*

1.19 *Standby mode* means the condition in which an energy-using product—

(a) Is connected to a main power source; and

(b) Offers one or more of the following user-oriented or protective functions:

(i) To facilitate the activation or deactivation of other functions (including active mode) by remote switch (including remote control), internal sensor, or timer.

(ii) Continuous functions, including information or status displays (including clocks) or sensor-based functions.

1.20 *Wireless control signal* means a wireless signal that is radiated to and received by the ballast for the purpose of controlling the ballast and putting the ballast in standby mode.

##### 2. Test Conditions

2.1 *Measurement of Electric Supply and Light Output*. The test conditions for testing fluorescent lamp ballasts shall be done in accordance with the ANSI C82.2–1984, (incorporated by reference; see § 430.3). Any subsequent amendment to this standard by the standard-setting organization will not affect the DOE test procedures unless and until amended by DOE. The test conditions are described in sections 4, 5, 6, 7, and 21 of ANSI C82.2–1984. The test conditions described in this section (2.1) are applicable to sections 3.3 and 3.4 of section 3, Test Method and Measurements.

2.2 *Measurement of Standby Mode Power*. The measurement of standby mode power need not be performed to determine compliance with energy conservation standards for fluorescent lamp ballasts at this time. The above statement will be removed as part of the rulemaking to amend the energy conservation standards for fluorescent lamp ballasts to account for standby mode energy consumption, and the following shall apply on the compliance date for such requirements.

The test conditions for testing fluorescent lamp ballasts shall be done in accordance with the American National Standard Institute ANSI C82.2–2002 (incorporated by reference; see § 430.3). Any subsequent amendment to this standard by the standard-setting organization will not affect the DOE test procedures unless and until amended by DOE. The test conditions for measuring standby power are described in sections 5, 7, and 8 of ANSI C82.2–2002. The test conditions described in this section (2.2) are applicable to section 3.5 of 3, Test Method and Measurements. Fluorescent lamp ballasts

that are capable of connections to control devices shall be tested with all commercially available compatible control devices connected in all possible configurations. For each configuration, a separate measurement of standby power shall be made in accordance with section 3.5 of the test procedure.

3. Test Method and Measurements

3.1 The test method for testing fluorescent lamp ballasts shall be done in accordance with ANSI C82.2-1984 (incorporated by reference; see § 430.3). The

test for measuring standby mode energy consumption of fluorescent lamp ballasts shall be done in accordance with ANSI C82.2-2002 (incorporated by reference; see § 430.3).

\* \* \* \* \*

3.5 Standby Mode Power Measurement

3.5.1. Send a signal to the ballast instructing it to have zero light output using the appropriate ballast communication protocol or system for the ballast being tested.

3.5.2 *Input Power.* Measure the input power (watts) to the ballast in accordance with ANSI C82.2-2002, section 13, (incorporated by reference; see § 430.3).

3.5.3 *Control Signal Power.* The power from the control signal path will be measured using all applicable methods described below.

3.5.3.1 *AC Control Signal.* Measure the AC control signal power (watts), using a wattmeter (W), connected to the ballast in accordance with the circuit shown in Figure 1.

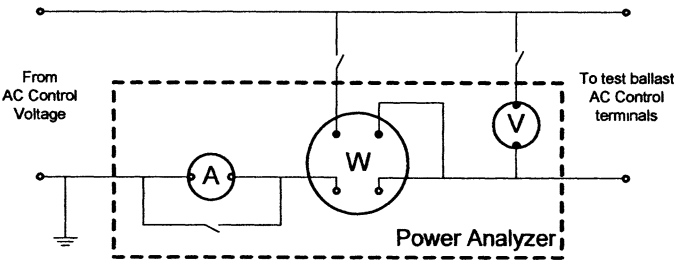


Figure 1: Circuit for Measuring AC Control Signal Power in Standby Mode

3.5.3.2 *DC Control Signal.* Measure the DC control signal voltage, using a voltmeter (V), and current, using an ammeter (A),

connected to the ballast in accordance with the circuit shown in Figure 2. The DC control signal power is calculated by multiplying the

DC control signal voltage and the DC control signal current.

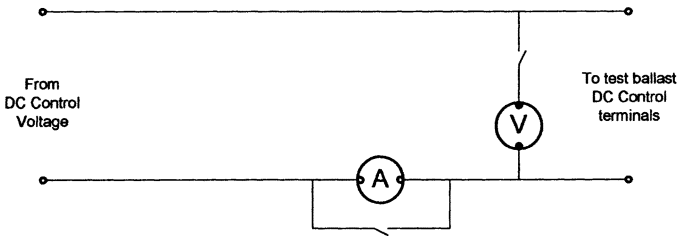


Figure 2: Circuit for Measuring DC Control Signal Power in Standby Mode

3.5.3.3 *Power Line Carrier (PLC) Control Signal.* Measure the PLC control signal power (watts), using a wattmeter (W), connected to the ballast in accordance with the circuit

shown in Figure 3. The wattmeter must have a frequency response that is at least 10 times higher than the PLC being measured in order to measure the PLC signal correctly. The

wattmeter must also be high-pass filtered to filter out power at 60 Hertz.

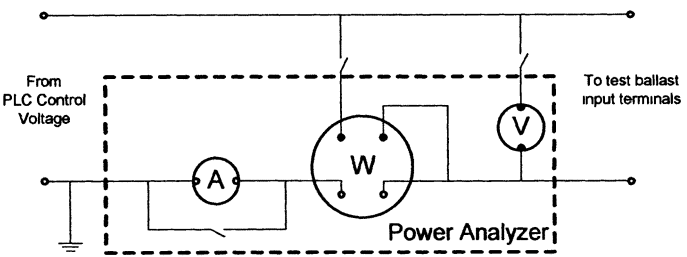


Figure 3: Circuit for Measuring PLC Control Signal Power in Standby Mode

3.5.3.4 *Wireless Control Signal.* The power supplied to a ballast using a wireless signal is not easily measured, but is estimated to be well below 1.0 watt. Therefore, the wireless control signal power is not measured as part of this test procedure.

[FR Doc. E9-25325 Filed 10-21-09; 8:45 am]

BILLING CODE 6450-01-P

## DEPARTMENT OF TRANSPORTATION

### Federal Aviation Administration

#### 14 CFR Part 25

[Docket No. NM408; Special Conditions No. 25-391-SC]

#### Special Conditions: Alenia Model C-27J Airplane; Liquid Oxygen System

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final special conditions.

**SUMMARY:** These special conditions are issued for the Alenia Model C-27J airplane. This airplane will have novel or unusual design features when compared to the state of technology described in the airworthiness standards for transport-category airplanes. These design features include a liquid-oxygen (LOX) system. The applicable airworthiness regulations do not contain adequate or appropriate safety standards for oxygen systems that use liquid oxygen. These special conditions contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards.

**DATES:** *Effective Date:* November 23, 2009.

**FOR FURTHER INFORMATION CONTACT:** Tom Groves, FAA, International Branch, ANM-116, Transport Airplane Directorate, Aircraft Certification Service, 1601 Lind Avenue, SW., Renton, Washington 98057-3356; telephone (425) 227-1503, facsimile (425) 227-1149.

#### SUPPLEMENTARY INFORMATION:

##### Background

On March 27, 2006, the European Aviation Safety Agency (EASA) forwarded to the FAA an application from Alenia Aeronautica of Torino, Italy, for U.S. type certification of a twin-engine commercial transport designated as the Model C-27J. The C-27J is a twin-turbopropeller, cargo-transport aircraft with a maximum takeoff weight of 30,500 kilograms.

#### Type Certification Basis

Under the provisions of section 21.17 of Title 14, Code of Federal Regulations (14 CFR) and the bilateral agreement between the U.S. and Italy, Alenia Aeronautica must show that the C-27J meets the applicable provisions of 14 CFR part 25, as amended by Amendments 25-1 through 25-87. Alenia also elects to comply with Amendment 25-122, effective September 5, 2007, for 14 CFR 25.1317.

If the Administrator finds that existing airworthiness regulations do not adequately or appropriately address safety standards for the C-27J due to a novel or unusual design feature, the FAA prescribes special conditions under provisions of 14 CFR 21.16.

In addition to the applicable airworthiness regulations and special conditions, the C-27J must comply with the fuel-vent and exhaust-emission requirements of 14 CFR part 34 and the noise-certification requirements of 14 CFR part 36, and the FAA must issue a finding of regulatory adequacy pursuant to § 611 of Public Law 92-574, the "Noise Control Act of 1972."

The FAA issues special conditions, as defined in 14 CFR 11.19, in accordance with § 11.38, and they become part of the type-certification basis under § 21.17(a)(2).

Special conditions are initially applicable to the model for which they are issued. Should the type certificate for that model be amended later to include any other model that incorporates the same or similar novel or unusual design feature, the special conditions also apply to the other model under § 21.101.

#### Novel or Unusual Design Features

The Alenia Model C-27J incorporates a liquid-oxygen system, including a liquid-oxygen converter, valves, evaporating coils, lines, regulators, indicators, fittings, etc. The existing airworthiness regulations do not adequately or appropriately address safety standards for the design and installation of oxygen systems that utilize liquid oxygen. These special conditions for the C-27J contain the additional safety standards that the Administrator considers necessary to establish a level of safety equivalent to that established by the existing airworthiness standards for these novel or unusual design features.

#### Discussion

There are no specific regulations that address the design and installation of oxygen systems that utilize liquid oxygen for storage. Existing

requirements, such as §§ 25.1309, 25.1441(b) and (c), 25.1451, and 25.1453, in the Alenia C-27J certification basis, provide some design standards for crew and medical-oxygen-system installations. However, additional design standards for oxygen systems utilizing liquid oxygen are needed to supplement the existing applicable requirements. The quantity of liquid oxygen involved in this installation and the potential for hazards that may result when the oxygen content of an enclosed area becomes too high because of system leaks, malfunction, or damage from external sources, make it necessary to assure adequate safety standards are applied to the design and installation of the system in Alenia C-27J airplanes. These special conditions require Alenia to preclude or minimize the risk of these potential hazards. These special conditions are also intended to assure the safe operation of the liquid-oxygen system, and therefore require that:

- Adequate gaseous oxygen is available at temperatures appropriate for breathing;
- The liquid-oxygen converter and gaseous-oxygen-distribution lines are installed in locations that minimize their potential for damage;
- The quantity of available oxygen is clearly indicated to the flight crew;
- The system is designed to prevent leakage of oxygen into the cabin;
- Condensation from the system is collected and drained overboard;
- The system must be protected from possible ignition sources and structural damage; and
- Appropriate maintenance and operational instructions are provided to ensure the system's safe operation.

Taken together, these requirements would ensure that this liquid-oxygen system provides an equivalent level of safety to traditional oxygen systems.

#### Discussion of Comments

Notice of proposed special conditions no. 25-09-04-SC for the Alenia model C-27J airplane was published in the **Federal Register** on July 13, 2009. No comments were received, and the special conditions are adopted as proposed.

#### Applicability

As discussed above, these special conditions are applicable to the Alenia C-27J. Should Alenia apply at a later date for a change to the type certificate to include another airplane model incorporating the same novel or unusual design features, these special conditions apply to that model as well under § 21.101.