

DEPARTMENT OF ENERGY**Office of Energy Efficiency and Renewable Energy****10 CFR Part 431**

[Docket No. EE-RM/TP-99-450]

RIN No. 1904-AA96

Energy Efficiency Program for Commercial and Industrial Equipment: Test Procedures and Efficiency Standards for Commercial Warm Air Furnaces; Efficiency Certification, Compliance, and Enforcement Requirements for Commercial Heating, Air Conditioning and Water Heating Equipment**AGENCY:** Office of Energy Efficiency and Renewable Energy, Department of Energy.**ACTION:** Proposed Rule and Public Hearing.

SUMMARY: The Energy Policy and Conservation Act, as amended (EPCA), establishes energy efficiency standards and test procedures for certain commercial equipment, including commercial warm air furnaces. In today's rule the Department of Energy (DOE or the Department) proposes regulations to implement the standards and test procedures for these furnaces and to address other ancillary matters (e.g., compliance certification, prohibited actions, and enforcement procedures) for commercial heating, air conditioning and water heating equipment generally.

DATES: The Department will accept comments, data, and information regarding the proposed rule until February 28, 2000. Please submit ten (10) copies. In addition, the Department requests that you provide an electronic copy (3½" diskette) of the comments in WordPerfect™ 8.

The Department will hold a public hearing on Thursday, January 27, 2000, in Washington, DC. Please send requests to speak at the hearing so that the Department receives them by 4:00 p.m., January 24, 2000. Send ten (10) copies of your statements for the public hearing so that the Department receives them by 4:00 p.m., January 24, 2000. The Department also requests a computer diskette (WordPerfect™ 8) of each statement.

ADDRESSES: Please address requests to make statements at the public hearing and send copies of such statements to Ms. Brenda Edwards-Jones, and send written comments to Mr. Cyrus Nasser, each at the following address: U.S. Department of Energy, Office of Energy

Efficiency and Renewable Energy, EE-41, 1000 Independence Avenue, SW, Washington, DC 20585-0121. You should identify all such documents both on the envelope and on the documents as "Energy Conservation Program for Commercial Equipment: Test Procedures for Commercial Warm Air Furnaces and Certification Requirements for Commercial Equipment, Docket No. EE-RM/TP-99-450." The hearing will begin at 9:00 a.m., on Thursday, January 27, 2000, and will take place in Room 1E-245 at the U.S. Department of Energy, Forrestal Building, 1000 Independence Avenue, SW, Washington, DC 20585-0121. You can find more information concerning public participation in this rulemaking proceeding in section IV, "Public Comment," of this notice.

You can read copies of the transcript of the public hearing and public comments received in the Freedom of Information Reading Room (Room No. 1E-190) at the U.S. Department of Energy, Forrestal Building, 1000 Independence Avenue, SW, Washington, DC 20585-0121, between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday, except Federal holidays.

FOR FURTHER INFORMATION CONTACT:

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SUPPLEMENTARY INFORMATION:

The proposed rule refers to certain industry standards established by the American National Standards Institute (ANSI), the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE), the Illuminating Engineering Society of North America (IES), and Underwriters Laboratories (UL). These individual industry standards are referenced by the single comprehensive "ANSI/ASHRAE/IES Standard 90.1-1989," which will be cited by its shorter title "ASHRAE/IES Standard 90.1" in the rest of this document. The proposed rule would incorporate, by reference, the test procedures contained in ASHRAE/IES Standard 90.1 for commercial warm air furnaces. Those industry standards are: American National Standards Institute

(ANSI) Standard Z21.47-1993, "Gas-Fired Central Furnaces"; and Underwriters Laboratories (UL) Standard 727-1994, "Standard for Oil-Fired Central Furnaces." The proposed rule would also incorporate by reference, (1) Sections 8.2, 11.2, and 11.2.1, and accompanying Forms 715 and 721, of the Hydronics Institute (HI) Standard "Testing and Rating Standard for Heating Boilers," 6th Edition, 1989, which specify a flue loss calculation procedure for oil-fired equipment, and (2) Sections 7.2.2.4, 7.8, 9.2 and 11.3.7 of the ASHRAE Standard 103-1993, "Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers," which specify a test procedure for condensing furnaces.

You can view copies of these standards at the Department of Energy's Freedom of Information Reading Room at the address stated above. You can obtain copies of the ASHRAE and HI standards from the American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc., 1971 Tullie Circle, NE, Atlanta, GA 30329, and the Hydronics Institute Inc., 35 Russo Place, Berkeley Heights, N.J. 07922, respectively. You can obtain copies of the ANSI and UL standards from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112, or <http://global.ihs.com/>. You can obtain electronic versions of the ASHRAE standards at ASHRAE's web site, <http://www.ashrae.org/book/bookshop.htm>, and of the ANSI standards at ANSI's web site, <http://webstore.ansi.org/ansidocstore/>. For more information concerning public participation in this rulemaking proceeding, see section IV, "Public Comment," of this notice.

You can obtain the latest information regarding the public hearing from the Office of Codes and Standards world wide web site at the following address: http://www.eren.doe.gov/buildings/codes_standards/index.htm.

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I. Introduction

A. Authority

Part B of Title III of the Energy Policy and Conservation Act (EPCA) of 1975, Pub. L. 94-163, as amended, by the National Energy Conservation Act of 1978 (NECPA), Pub. L. 95-619, the National Appliance Energy Conservation Act of 1987 (NAECA), Pub. L. 100-12, the National Appliance Energy Conservation Amendments of 1988 (NAECA 1988), Pub. L. 100-357, and the Energy Policy Act (EPACT), Pub. L. 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 included air

conditioning equipment, furnances, and other types of equipment.

EPACT also amended EPCA with respect to industrial equipment. It provided definitions, test procedures, labeling provisions, energy conservation standards, and authority to require information and reports from manufacturers. See 42 U.S.C. 6311-6316. Specifically, for example, EPCA now authorizes the Secretary of Energy to prescribe test procedures that are reasonably designed to produce results which reflect energy efficiency, energy use and estimated operating costs, and that are not unduly burdensome to conduct. 42 U.S.C. 6314. With respect to certain industrial equipment for which EPCA prescribes energy conservation standards, including commercial war air furnances, "the test procedures shall be those generally accepted industry testing procedures or rating procedures developed or recognized by the American Society of Heating, Refrigerating and Air Conditioning Engineers, as referenced in ASHRAE/IES/ Standard 90.1 and in effect on June 30, 1992." 42 U.S.C. 6314(a)(4)(A). Further, if such an industry testing or rating procedure gets amended, DOE must revise its test procedure to be consistent with the amendment, unless the Secretary determines, based on clear and convincing evidence, that to do so would not meet general requirements spelled out in the statute for test procedures. 42 U.S.C. 6314(a)(4)(B). Before prescribing any test procedures for this equipment, the Secretary must publish them in the **Federal Register** and afford interested persons at least 45 days to present data, views and arguments. 42 U.S.C. 6314(b). Effective 360 days after a test procedure rule applicable to certain covered equipment, including commercial warm air furnances, is prescribed, no manufacturer, distributor, retailer or private labeler may make any representation in writing or in broadcast advertisement respecting the energy consumption or cost of energy consumed by such equipment, unless it has been tested in accordance with the prescribed procedure and such representation fairly discloses the results of the testing. 42 U.S.C. 6314(d). Finally, EPACT extends certain powers, originally granted to the Secretary under NAECA, to require manufacturers of equipment covered by this proposed rule to submit information and reports for a variety of purposes, including insuring compliance with requirements. See 42 U.S.C. 6316(a).

B. Background

1. General

The Department of Energy (DOE or the Department) has an energy conservation program for consumer products, conducted under Part B of Title III of EPCA, 42 U.S.C. 6291-6309. Under EPCA, the consumer appliance standards program essentially consists of four parts: test procedures, Federal energy conservation standards, labeling, and certification and enforcement procedures. The Federal Trade Commission (FTC) is responsible for labeling, and the Department implements the remainder of the program as codified in Title 10 of the Code of Federal Regulations, Part 430—Energy Conservation Program for Consumer Products.

Since 10 CFR part 430 covers consumer products, which differ from commercial and industrial equipment, the Department is creating a new Part 431 in the Code of Federal Regulations (10 CFR part 431), Energy Conservation Program for Commercial and Industrial Equipment, to implement DOE's program for certain commercial and industrial equipment covered under EPCA. These will include commercial heating, air conditioning and water heating equipment. This new program will consist of: Test procedures, Federal energy conservation standards, labeling, and certification and enforcement procedures. EPCA directs the Department, rather than the FTC, to administer the statute's efficiency labeling provisions for commercial equipment.

On April 14 and 15, 1998, the Department convened a public workshop to solicit views and information from interested parties that would aid in the development of rules for commercial heating, air conditioning and water heating equipment. The Department requested comment on a number of specific issues, including issues related to test procedures, and the most cost effective and reliable regimes for sampling, certification and enforcement. Statements during the public workshop and written comments that were received afterwards helped refine the issues involved in this rulemaking and provided useful information contributing to their resolution. The Department convened a second public workshop on October 18, 1998, to obtain comments on the issues as they had been refined, and on approaches presented by the National Institute of Standards and Technology (NIST) for resolving them.

2. The Test Procedures for Furnaces

During the April 1998 workshop, the Department sought comments on the following issues regarding test procedures for commercial warm air furnaces:

(1) EPCA uses thermal efficiency as the descriptor for reporting the efficiency value of commercial warm air furnaces. The test standard ANSI Standard Z21.47, referenced by ASHRAE/IES Standard 90.1 for gas-fired furnaces, defines a thermal efficiency whose value is calculated by the flue loss method, resulting in a value that is customarily called combustion efficiency in the Heating, Ventilation and Air-Conditioning and Water Heating (HVAC & WH) industry. Also, the test standard UL Standard 727 referenced by ASHRAE/IES Standard 90.1 for oil-fired furnaces specifies the determination of a flue loss during the combustion test under steady state conditions resulting similarly in a value for combustion efficiency. Based on the fact that the combustion efficiency values are calculated by the referenced test standards, should the Department interpret the EPCA efficiency descriptor "thermal efficiency" to have the same meaning that "combustion efficiency" has in common technical use?

(2) The referenced test standard for oil-fired furnaces, UL Standard 727, does not provide a calculation procedure for the determination of flue loss. Should DOE designate the flue loss calculation procedure from the Hydronics Institute Testing and Rating Standard for Heating Boilers, the referenced test standard for oil-fired boilers, for calculating flue loss?

(3) Should DOE provide a procedure specifically for testing condensing furnaces?

Attendees at the April 1998 workshop provided comments and input on these issues and the California Energy Commission (CEC) provided additional written comments afterwards. These comments helped to further clarify the issues. Section II, Discussion, will cover them in more detail.

After the April 1998 workshop, the Department and NIST worked towards addressing the identified issues for commercial warm air furnaces. A set of recommendations resulted from that work, and NIST developed a summary report of the recommendations. The summary report formed the basis for discussions during the October 18 workshop, which enabled the Department to elicit further views and information from interested parties. The summary report included draft rule

language for commercial warm air furnaces.

C. The Proposed Rule

In today's proposed rule the Department proposes energy efficiency test procedures for commercial warm air furnaces. In formulating these test procedures, the Department has considered both oral and written comments, and has incorporated recommendations where appropriate. Section II below contains the reasons for incorporating or not incorporating any significant recommendations. The Department will soon issue separate notices of proposed rulemaking regarding test procedures for commercial water heaters, boilers and air conditioners.

Today's proposed rule also contains compliance, certification, enforcement and certain other general provisions that would apply to all covered commercial heating, air conditioning and water heating equipment. The Department intends to promulgate a single set of provisions on these subjects for all classes of such equipment, and therefore the other notices proposing test procedures for such equipment will not address these subjects.

II. Discussion

A. General

This section discusses the main test procedure issues identified for commercial warm air furnaces and certification and enforcement issues for all covered commercial heating, air conditioning and water heating equipment. The furnace test procedure issues are discussed in subsection (B) "ASHRAE/IES Standard 90.1 Referenced Furnace Test Standards," subsection (C) "Definition of Thermal Efficiency for Furnaces," and subsection (D) "Procedures for Measuring Flue Losses of Oil Furnaces and Incremental Efficiency of Condensing Furnaces." Subsection (E) addresses the certification and enforcement issues for commercial heating, air conditioning and water heating equipment generally.

B. ASHRAE/IES Standard 90.1 Referenced Furnace Test Standards

EPCA requires that the testing procedures for measuring the efficiency of commercial warm air furnaces must be those generally accepted industry testing procedures or rating procedures that were developed or are recognized by the American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., as referenced in ASHRAE/IES Standard 90.1 and that were in effect on June 30, 1992. Also, if

such an industry test procedure or rating procedure for commercial warm air furnaces is amended, the Secretary of Energy must adopt such revisions unless the Secretary determines that to do so would not produce test results which reflect energy efficiency, energy use, and estimated operating costs, or that the procedures would be unduly burdensome to conduct.

The version of ASHRAE/IES Standard 90.1 in effect on June 30, 1992 references two industry test standards: one for gas-fired furnaces, the American National Standard Institute (ANSI) Standard Z21.47-1987 (ANSI Standard Z21.47); and the other for oil-fired furnaces, Underwriters Laboratory (UL) Standard 727-1986 (UL Standard 727). Since 1989, both industry test standards have been revised several times. The revised ANSI Standard Z21.47-1987 has resulted in ANSI Standard Z21.47-1993, and the revised UL Standard 727-1986 in UL Standard 727-1994. Also, ASHRAE revised ASHRAE/IES Standard 90.1-1989 itself *via* several addenda: 90.1b, 90.1d, and 90.1e in 1992; 90.1c, 90.1g, and 90.1i in 1993; and 90.1m in 1995 and 90.1n in 1997. Two of the addenda contained revisions related to warm air furnaces: Addendum 90.1b updated the referenced furnace test standards to their most up-to-date versions in 1992, and Addendum 90.1i revised the Table (Table 10.9 in ASHRAE/IES Standard 90.1) containing the Standard Rating Conditions and Minimum Performance with respect to warm air furnaces. Currently, a major revision to ASHRAE/IES Standard 90.1-1989, designated as ASHRAE/IES Standard 90.1-1989R, is going through the ASHRAE public review process. Once ASHRAE formally completes revisions to ASHRAE/IES Standard 90.1, the Department intends to either amend its test procedure as necessary to make it consistent with the amended version of ASHRAE/IES 90.1, or determine by rule that doing so would not meet certain EPCA requirements (for example, it would be unduly burdensome to conduct).

Regarding the two industry test standards revised after June 30, 1992, there is no change in the energy performance test section of either standard from its prior version. Therefore, the Department proposes to incorporate by reference the latest versions of the two referenced test procedures. These test standards are ANSI Standard Z21.47-1993 for gas-fired central furnaces and UL Standard 727-1994 for oil-fired central furnaces.

C. Definition of Thermal Efficiency for Furnaces

EPCA specifies the energy standard levels and values for commercial warm air furnaces in terms of thermal efficiency. Section 342(a)(4)(A)–(B), 42 U.S.C. 6313(a)(4)(A)–(B). The test standard ANSI Standard Z21.47 (for gas-fired furnaces) specifies that the thermal efficiency for a furnace is to be computed by a formula defined as “100 percent minus percent flue loss,” and UL Standard 727 (for oil-fired furnaces) defines a maximum allowable flue loss (which is not to exceed 25 percent) in its combustion test section. Other than the flue loss requirement, UL Standard 727 does not provide for or require the calculation of either efficiency or output. However, with the measured flue loss, one can calculate an efficiency using the formula as specified in ANSI Standard Z21.47. The efficiency as calculated by the formula in ANSI Standard Z21.47 (and defined as thermal efficiency in ANSI Standard Z21.47) is customarily called the combustion efficiency of fossil-fueled equipment. The statute does not provide a definition for the term “thermal efficiency.”

These points were discussed during the April 1998 workshop. Conventionally, the definition for “thermal efficiency” is the useful output of a device divided by its input, expressed in percent. It is related mathematically to the combustion efficiency (also expressed in percent) by the equation “Thermal Efficiency (percent) = Combustion Efficiency (percent) – Jacket Loss (percent),” where the combustion efficiency is equal to “100 percent minus flue loss (percent).” The discussion concerned whether the Department should include a jacket loss measurement, in addition to the flue loss, in the test procedure.

GAMA (Page 158, April 14, 1998 Workshop Transcript) asserted that (1) the thermal efficiency in the statute actually referred to the classical definition of combustion efficiency, (2) thermal efficiency was specified because it was so called in the referenced test procedure, and (3) it meant 100 percent minus flue loss (percent). GAMA believes that defining the term thermal efficiency to be “combustion efficiency minus jacket loss” would change both the intent and the stringency of the requirements that currently exist in ASHRAE/IES Standard 90.1 and in EPCA. GAMA further stated that there is an additional requirement in the proposed ASHRAE/IES Standard 90.1–1989R limiting the jacket loss of the furnace to less than

0.75% of the input rating. GAMA stated that this prescriptive requirement was an outgrowth of discussions between the industry and the ASHRAE committee about defining a seasonal measure of efficiency for commercial warm air furnaces, and the resulting compromise was to continue to specify a thermal efficiency term that is 100 percent minus flue losses, to be followed by several additional prescriptive requirements that relate to off-cycle losses, for example. Consequently, GAMA stated that it would be strongly opposed to any suggestion to define the term thermal efficiency as [100 percent – flue loss (percent) – jacket losses (percent)].

Rheem (Page 162, April 14, 1998 Workshop Transcript) pointed out that the efficiency definition also raises a functional issue. To achieve EPCA efficiency values under a traditional definition of thermal efficiency (e.g., an 80 percent thermal efficiency as determined by reducing the combustion efficiency by the jacket loss) could result in flue gas condensation, which causes corrosion and premature failures.

Based on the above discussion, the Department understands that the consensus of the attendees was that in the test procedure the term “thermal efficiency,” as specified in the statute for commercial warm air furnaces means what is commonly defined as “combustion efficiency” in other contexts. The Department believes that, consistent with adopting industry test standards referenced in ASHRAE/IES Standard 90.1–1989, the statute’s intent is to assign the same meaning to the term “thermal efficiency” as its definition in the corresponding referenced standards. Therefore, the Department believes that the term thermal efficiency, when used as the energy standard descriptor for commercial warm air furnaces, should be calculated as 100 percent minus percent flue loss, as was specified in the referenced ANSI Standard Z21.47. When the Department proposed this approach during the October 1998 workshop, there was no objection from the participants. Accordingly, the Department proposes today to explicitly define the term thermal efficiency of commercial warm air furnaces as equal to 100 minus the percent flue loss. This proposal would avoid any possible future confusion regarding the meaning of the term thermal efficiency when used in the test procedure for commercial warm air furnaces.

D. Procedures for Measuring Flue Losses of Oil Furnaces and Incremental Efficiency of Condensing Furnaces

1. Flue Loss Calculation for Oil-Fired Furnaces

As stated above, the referenced test standard for oil-fired furnaces, UL Standard 727, does not provide a calculation procedure for the determination of flue loss. However, a value for the percent flue loss is needed for determining the efficiency. At the April, 1998 workshop, the Department suggested the use of the flue loss calculation specified in the ASHRAE Standard 90.1 referenced test standard for oil-fired boilers—the 1989 edition of the Hydronics Institute Testing and Rating Standard for Heating Boilers—for calculating the flue loss of an oil-fired furnace. Since the type of flue gas data required and the formulas/equations used for the flue loss calculation are identical for any oil-fired equipment, the calculation procedure as specified in the Hydronics Institute test standard for an oil-fired boiler is directly applicable to an oil-fired furnace. There were no comments opposing the Department’s suggestion during the Department’s workshops held during April and October 1998.

For the above reasons, the Department is proposing as the calculation procedure for percent flue loss for oil-fired furnaces the procedure in (1) sections 8.2, 11.2, and 11.2.1 of the 1989 Hydronics Institute Testing and Rating Standard for oil-fired boilers, and (2) those parts of accompanying Forms 715 and 721 which specify the items to be measured and calculated to obtain flue loss, and which are not related to steam, water or natural gas.

2. Condensing Furnaces

Participants raised and discussed the issue of testing a condensing furnace (a warm air furnace designed to condense part of the water vapor in the flue gases and equipped with a means of collecting and draining this condensate) during the Department’s April 1998 workshop. ASHRAE/IES Standard 90.1 and the two test standards referenced by ASHRAE/IES Standard 90.1 do not specifically provide test conditions for testing a condensing furnace.

Attendees at the April 1998 workshop from the furnace industry (GAMA, York International, and Lennox) stated that there are very few, if any, commercial unitary or rooftop condensing furnaces on the market, and it is difficult to provide for the requirements of a condensing furnace in a roof-top installation. Therefore, they stated, it is not necessary to provide a DOE test

procedure for testing the condensing feature of a commercial furnace at present.

York (April 14, 1998 Workshop Transcript, Page 220) stated that condensate measurement should not be specified for condensing boilers and furnaces. York stated that in general, rooftop combustion equipment will not operate under condensing conditions, because of the difficulty of condensate disposal. York felt that in the future, condensing furnaces might become a possibility as the technology evolves. York stated that currently, most rooftop units have an efficiency of 80 percent or less, and they operate at flue temperature above condensing range.

Lennox (April 14, 1998 Workshop Transcript, Page 220) agreed with the York comment and emphasized that although condensing units have been on the market for a long time, none of them, for all intents and purposes, are unitary products sold for commercial applications. Lennox stated that this is due to a number of problems, and if these problems were to be solved through a technological breakthrough, then a test procedure would be appropriate.

During the October workshop, Natural Resources Canada (October 13, 1998 Workshop Transcript, Page 285) stated that the condensate collected from the condensing furnace should be only what condenses within the appliance itself and not beyond the heat exchanger.

The Department disagrees with the observation from the furnace industry workshop attendees that DOE's adoption of a test procedure for determining the improvement to the efficiency due to the condensing feature of a condensing furnace is unwarranted at the present time. Since a condensing furnace is likely to provide a significantly higher efficiency, the Department believes that a test procedure should be in place in order to have a readily available, accurate method for testing these more efficient furnaces in the future, even if no commercial condensing furnaces are on the market at the present time. In addition, a test procedure is needed for evaluating this design option during any future consideration of possible revisions to the efficiency standard.

Although the ASHRAE/IES Standard 90.1 does not specify a test procedure for measuring the energy efficiency of a condensing furnace, an industry test procedure—ASHRAE Standard 103–1993—does exist for residential condensing furnaces and industry has been using it for over a decade. The Department believes that the method of collecting and measuring the quantity

and the temperature of the flue condensate under steady state conditions at the maximum rated input over a 30 minute test period, should also be applicable to a commercial condensing furnace. Since the Department sees no technical problems in its application to commercial warm air furnaces, the Department is proposing to adopt the test procedure specified in section 7.2.2.4, 7.8, 9.2 and 11.3.7 of ASHRAE Standard 103–1993 for determining the increment in energy efficiency due to the condensing feature of a condensing furnace. In adopting the test procedure, a slight modification is applied to the equation in Section 11.3.7.2 of ASHRAE 103–1993 for steady-state heat loss due to hot condensate flowing down the drain. In the aforementioned section, the assumed indoor temperature is 70°F, and the average outside temperature is specified as 42°F. The modification replaces both of these temperatures with the actual temperature of the test area, to be consistent with Section 2.2.8 of ANSI Z21.47–1993, during the steady-state thermal efficiency test.

The Department agrees with the recommendation from Natural Resources Canada that the condensate from the unit be separated from the condensate from the flue pipe. The referenced test procedure in ASHRAE Standard 103–1993 requires an installation which prevents the flue pipe condensate from flowing back into the unit. (See section 7.2.2.4 of ASHRAE Standard 103–1993).

E. Sampling, Certification and Enforcement for Commercial Heating, Air Conditioning and Water Heating Equipment

1. Background and Public Comments

a. Purpose. The purpose of establishing regulations concerning sampling, certification and enforcement is to provide reasonable assurance that covered commercial equipment are appropriately tested and actually comply with applicable energy conservation standards. In today's rule, the Department proposes a set of provisions concerning compliance certification and enforcement procedures for certain commercial equipment. To help assure compliance with energy conservation standards, the rule would require that each manufacturer use one of the specified methods for determining the efficiency of each basic model of its commercial heating, air conditioning and water heating equipment, and certify that the basic models comply with the applicable energy conservation

standards. In addition, the rule specifies enforcement procedures for use in resolving any disputed performance claims for such commercial equipment.

b. Sampling. For consumer products, as described in 10 CFR part 430, manufacturers must test a sample of each basic model of a covered product to establish its efficiency level and its compliance with the applicable energy efficiency descriptor value specified in the Act. The test procedure for each product incorporates a sampling plan designed to give a reasonable assurance that the true mean performance of the equipment being manufactured and sold meets or exceeds the applicable value, and is accurately determined. The mean performance is a critical performance characteristic of a covered product because it determines the overall energy usage of a covered product population, and thus the impact of the product on national energy consumption. Individual units produced from a single design may vary in energy efficiency, however, for a number of valid reasons, including variability in manufacturing. The Department must balance the risk to the public of purchasing a non-complying unit with the burden on the manufacturer in conducting performance testing to assure compliance, to provide adequate protection for the public without imposing an excessive testing burden on the manufacturers. Given that performance testing of every unit of a covered product would be prohibitively expensive and time-consuming, the manufacturer must estimate the average performance of the basic model using a sample drawn from the population. The method for estimating equipment performance from a small sample of a large population is called a sampling plan.

c. Public Comments and Recommendations. At the April 1998 workshop, the Department presented for discussion compliance certification and enforcement sampling procedures for commercial equipment that were similar to those established in the past for consumer products. These require manufacturers to certify compliance based on testing under strictly prescribed statistical sampling schemes designed to assure, with reasonable probability, that the average efficiency of each product sold meets the applicable standard. Enforcement involves a similar, but not identical statistical sampling arrangement. The advantage of this approach is that manufacturers can provide adequate assurance of compliance without having to test every single unit they produce.

When presented with the concept of applying a prescribed statistical sampling method to certifying commercial equipment, the participants at the April 1998 workshop made the following general observations:

i. A workable uniform sampling method covering the wide variety of commercial equipment would be difficult, if not impossible, to formulate. This is due to the large number of design variations and small numbers of identical units for some equipment.

ii. The California Energy Commission (CEC) and several voluntary industry associations already have effective efficiency certification programs in place that leave the sample design to the manufacturer.

iii. With adequate independent verification and penalties for improper certification by a verification program, prescribing the sampling schemes is unnecessary, since the manufacturers would have an incentive to design them in each case so as to limit the risk of being found to be out of compliance.

With these observations in mind, the Department investigated the certification programs of the State of California, the Air Conditioning and Refrigeration Institute, the Gas Appliance Manufacturers' Association, and the Hydronics Institute. Participation in these industry programs, generically referred to as Voluntary Independent Certification Programs (VICP's), could help provide assurance of accurate performance claims. Manufacturers have been participating in VICP's primarily for marketing reasons, since they feel that demonstrating the performance of their equipment via an independent testing agency adds legitimacy to their performance claims. VICP's are typically operated by industry associations, and the costs of the programs are covered by fees paid by the participating manufacturers. Manufacturers certify the performance metrics of their equipment to the VICP, the VICP publishes a directory that lists performance values of equipment offered for sale by each manufacturer, and the VICP periodically verifies the performance claims. When the VICP determines that a model performs below its rated level, generally the manufacturer must either re-rate the product or cease manufacturing it and have it removed from the directory (*i.e.*, "obsolete" the model). A manufacturer's failure to meet such conditions typically results in its expulsion from the VICP. All of these programs entail some form of the following: (1) Certification by a manufacturer to a VICP of the efficiency level of each of its covered products; (2)

the VICP's independent verification or supervision of levels claimed by the manufacturer; and (3) penalties imposed by the VICP to discourage inaccurate ratings and ensure that certified efficiencies would be reliable. On the other hand, some manufacturers do not participate in VICP's, and no program exists at present for commercial warm-air furnaces, so the Department would need to specify its own certification testing and verification arrangement, at least for equipment not otherwise covered by a VICP.

The Department received additional comments during, and subsequent to, the second public workshop which was held on October 18, 1998. These comments helped refine the proposed compliance certification and enforcement procedures to take advantage of current voluntary industry certification programs and allow alternate procedures for determining compliance.

At the second workshop, commenters suggested that DOE consider the following elements in the proposed rule:

- After DOE initially approves a VICP, in accordance with the specified criteria, a VICP should not require re-approval by DOE unless there is a change within the program. In case of such a change, the program would inform DOE promptly and apply for a re-approval. Another suggestion was that DOE approve a VICP for a pre-determined length of time (suggested time frame: 12 months to 5 years), during which DOE could revoke approval at any time if warranted.

- Participation in a VICP should be a basis for establishing both (1) the validity of product efficiency representations, and (2) compliance with minimum standards.

- The "obsoleting" of a model should not automatically follow its "delisting" from a VICP product directory, if the basic model falls short of the certified efficiency but still meets the minimum efficiency standards prescribed by EPCA.

- A VICP should monitor the performance data and provide this data to DOE.

- For Non-Participants in VICP's, review of manufacturer self-testing by a licensed Professional Engineer to assure compliance and the accuracy of efficiency representations by itself is not adequate. They should conduct performance testing or verify the testing results by using a qualified independent laboratory.

- DOE should approve alternative methods other than testing for efficiency determinations, but the Department should guard against public disclosure

of proprietary methods, which could harm individual manufacturers.

- An alternative method for efficiency determination should not require DOE approval in the case of VICP participants.

- Certification provisions should afford manufacturers the discretion to certify more conservative (*i.e.*, lower) efficiency ratings than the mean efficiency values predicted by the manufacturers' tests or calculations.

- Enforcement provisions should restrict the definition of units available for testing to units which are available for commercial distribution within the U.S.

- Enforcement testing should require samples of no more than two units initially, followed by up to two more units if the first two fail.

- The compliance statement for a basic model should be a one-time report to DOE which either the manufacturer/private labeler or a VICP acting on their behalf can submit.

Written comments underscored some of these observations and added others. The Air-Conditioning & Refrigeration Institute (ARI) (October 13, 1998 Workshop, Written Comment #9) requested that the regulations allow for the rerating of basic models that, when tested, fall short of their certified efficiency but still meet the minimum efficiency standards. ARI also requested that re-approval of a VICP should only be required when there is a change in the program, or after five years, whichever comes first. On the issue of enforcement testing, ARI supported starting with two test samples instead of four. They questioned the need for a compliance statement being submitted to DOE for manufacturers who participate in a VICP, since the VICP will have to be approved by DOE, and manufacturers' ratings will be verified through the VICP.

Written comments from the Gas Appliance Manufacturers Association (GAMA) (October 13, 1998 Workshop, Written Comment #10) also requested that the rerating of a product which meets the energy efficiency standard prescribed by EPCA, but tests lower than the rating submitted by the manufacturer, be allowed. GAMA also felt that periodic re-approval of a VICP should not be required, and that enforcement testing should entail an initial sample of two units. GAMA also questioned the need for a compliance statement for VICP participants.

Based upon the comments received during and after the public workshops, the Department proposes requiring manufacturers to certify compliance based on testing, and to either conduct

the testing under a DOE-prescribed sampling scheme, or participate in a VICP approved by the Department. Each option would afford the opportunity to utilize alternative efficiency determination methods. In this way, the Department proposes to minimize additional testing burdens on manufacturers of commercial equipment, while maintaining a certification procedure which is fair to all manufacturers, and which provides reasonable assurance that the established minimum performance standards are being met. The proposed procedures, described in the following sections, include a basic certification program, a provision for VICP's, and an enforcement testing plan. The Department anticipates that this proposal would not require any additional testing beyond what manufacturers who are participating in industry certification programs conduct already, and it would involve a similar level of testing by manufacturers who elect not to participate in VICP's.

2. Proposed Certification and Enforcement Procedures

a. Certification Procedures. The Department proposes to require each manufacturer to certify to the Department the efficiencies of commercial equipment it manufactures, either directly or through a VICP. This would be accomplished by submitting both a compliance statement, a one-time submittal, and a certification statement for each basic model of covered equipment. The manufacturer would be required to maintain records of all test results and related analysis used in the determination of the mean energy performance. Today's rule includes possible formats for certifying efficiency to the Department.

b. Basis for Certification: Methods for Determining Efficiency. Underlying each certification to the Department would be the manufacturer's determination of a basic model's energy efficiency or usage. The proposed rule would require a manufacturer to make such determination either by testing the basic model, or by calculating its energy efficiency or use through use of an alternative efficiency determination method (AEDM). The specific requirements for testing and AEDMs would differ, however, depending on whether a manufacturer's covered products were included in a VICP approved by the Department.

An AEDM is an analytical procedure, such as a computer simulation or other approach, that can determine the energy efficiency or use of a product. The Department proposes to permit the use

of AEDMs due to the potentially large number of basic model variations, and the burden that would result if the Department required that each basic model be tested to determine its efficiency. But a manufacturer could use an AEDM to establish the energy efficiency or use of covered equipment only if the AEDM had been verified and validated with measured data, *i.e.*, using test results. Thus, although the Department proposes to permit the use of AEDMs, and would not require the testing of every basic model, all efficiency determinations would be *based on testing*.

The proposed requirements for testing would apply both to tests used directly to determine the efficiency of a basic model, and to tests used to validate an AEDM. All manufacturers would be required to (1) perform testing in accordance with the applicable DOE test procedure, (2) test randomly selected units representative of the basic model, (3) have their testing and rating results meet industry standards for accuracy for the equipment being rated, and (4) test a sufficient number of units to produce an accurate estimate of the mean efficiency of all units manufactured of the basic model. The proposed rule allows VICP participants substantial discretion in this last respect, by permitting them to use any valid statistical method to determine the number of units to be tested and the mean efficiency. For non-participants, the Department is proposing stricter, prescribed sampling procedures, since their efficiency ratings will not be subject to routine verification testing.

As to AEDMs, in addition to the general requirements stated above, the Department would require any manufacturer employing an AEDM to maintain written documentation of its validation of the AEDM. In addition, if the equipment being rated is not listed with a VICP approved by the Department, validation would require demonstration that the results from using the AEDM are consistent with the results of actual tests of at least three basic models, and the manufacturer would be required to obtain advance approval of the AEDM by the Department. The manufacturer would apply for such approval in writing and submit all relevant information related to the calculations and calibration procedures.

c. Voluntary Independent Certification Program. Participation in a VICP would allow a manufacturer an alternative to (1) following the DOE sampling plan, and (2) required DOE approval of an AEDM. A VICP participant must still test its products

and validate its AEDM, and must file a compliance statement and certification report, either directly to the Department, or via the VICP on the manufacturers' behalf.

The Department proposes that it would approve VICP's that meet the following requirements:

- The VICP publishes in written form the procedures for the operation of the certification program, and permits all manufacturers of products covered by the program to participate so long as they comply with requirements concerning operation of the program.

- To participate in the VICP, a manufacturer would be precluded from distributing any basic models of equipment covered by the program unless it had reported to the VICP the energy efficiency or usage, as applicable, of that basic model, based on measurement of the basic model's performance.

- The VICP publishes or otherwise makes available to the general public and to the Department, these efficiency ratings.

- The VICP conducts periodic verification testing on listed equipment, such that the performance of each basic model is checked and compared to its rated efficiency value at least once every five years.

- The VICP testing personnel select units for verification testing randomly from manufacturer's stock.

- The VICP conducts its verification testing at an independent laboratory, or under the supervision of independent personnel, in accordance with the prescribed DOE test procedures.

- The VICP verification testing meets industry standards for the accuracy of testing and of rating results for the equipment being tested, and the program satisfactorily describes how it meets these standards.

- The VICP has an appropriate standard for determining whether the efficiency rating a manufacturer claims for a product is valid.

- The VICP provides to the manufacturer copies of all records of completed verification testing performed on the manufacturer's covered equipment.

- The VICP requires that, if a basic model fails verification testing conducted by the VICP, the manufacturer of the basic model must remove it from production and sale if the verification testing results show it is not in compliance with EPCA efficiency standards, or correctly re-rate it if it complies with such standards. The program must also provide that a participating manufacturer will be expelled from the VICP if it does not

comply with such requirements, and that the VICP will report to the Department verification test results that find the performance of a basic model not to meet EPCA efficiency standards. (A basic model "fails" verification testing when the VICP has compared the basic model's efficiency rating resulting from completion of that testing with the efficiency rating claimed by the manufacturer, and has determined that the rating claimed by the manufacturer is not valid.)

- The VICP provides for penalties or other incentives to encourage manufacturers to report accurate and reliable efficiency ratings.

- The VICP provides to the Department on an annual basis, summary data that shows the results of verification testing on each basic model, including the manufacturer's energy efficiency or use rating for the model, the measured energy efficiency or use from the verification testing, and either the energy conservation standard for the tested basic model or a description of the model sufficient to enable the Department to determine the standard that applies to the basic model. (See discussion in section 3 below)

Voluntary Independent Certification Programs which meet the above requirements could request the Department's approval by submitting documentation substantiating their compliance directly to the Department. Approval would remain in force for five years, unless material changes occur in the program. In the event of changes, the VICP administrator would be required to notify the Department, which may at that time rescind the approval. At the end of any such five-year period, the VICP could request re-approval.

The VICP could submit compliance and certification paperwork to the Department on the behalf of participating manufacturers.

d. Manufacturers Not Participating in a VICP. As discussed above, the Department proposes requiring manufacturers not participating in VICP's to meet more specific criteria for testing and AEDMs. With regard to testing, the sampling procedure referred to above would require a manufacturer to select a sample of sufficient size to ensure that:

- Any represented value of energy efficiency is no greater than the lower of the mean of the sample, or the lower 95 percent confidence limit of the true mean divided by 0.95; and,
- Any represented value of energy usage is no less than the greater of the mean of the sample, or the upper 95 percent confidence limit of the true mean divided by 1.05.

The Department also proposes that manufacturers of commercial heating, air conditioning and water heating equipment who do not participate in a VICP approved by the Department, must conduct all performance testing of covered products at an independent laboratory, or under the supervision of independent testing personnel. This requirement would provide greater assurance of the accuracy and reliability of such testing. It is also warranted by the lack of on-going verification of the efficiency ratings of non-participants in VICPs, and by DOE's proposal that verification testing by VICPs be conducted by an independent facility or under independent supervision. DOE is uncertain, however, as to whether sufficient numbers of independent testing laboratories and personnel exist to enable manufacturers to satisfy this requirement, and whether it would otherwise impose undue burdens on manufacturers. Therefore, the Department encourages interested parties to address these issues in particular, including whether the Department should modify or omit this requirement in the proposed rule.

e. Enforcement. The Department proposes that the enforcement provisions for commercial heating, air conditioning and water heating equipment would be for the most part virtually identical to those in 10 CFR Part 430, except for the sampling plan for enforcement testing. The proposed sampling plan for enforcement testing would require a manufacturer to provide to DOE an initial sample size of two units for enforcement testing, with a manufacturer's option of testing an additional two units, for a maximum sample size of four units. The Department could allow an exception to the sample size for very large units on a case-by-case basis, such that only a single unit would be tested. Manufacturers would be permitted to request such an exception from the Department.

Participation in a VICP would not affect a manufacturer's obligations as described in the enforcement regulations.

3. Accommodation for Manufacturing Tolerances, Measurement Uncertainty and Small Sample Sizes

As indicated above, VICP's conduct verification testing to determine if a manufacturer's rating of a basic model is accurate. The testing frequently consists of tests on a single unit, or at most two units, of the model. Following the tenets of probability, the measured energy efficiency or use derived from testing any small sample, such as one or two

units of a basic model, may be higher or lower than the average for the basic model population as a whole. These variations may be due to manufacturing tolerances and/or measurement uncertainty. As a result, VICP's frequently employ a tolerance band by which a basic model is deemed not to fail verification testing unless its performance measured from the testing is below the manufacturer's rating for the model by more than a set percentage, such as 5 percent. The justification for this tolerance band is to avoid a false conclusion that a basic model has been over-rated, based on test results for a small sample.

The Department has generally required that compliance with the energy conservation standards in EPCA be determined by whether the mean performance of the entire population of a covered product meets the minimum standard applicable to that product. Under this approach, an individual unit of a product could have a measured efficiency less than the applicable minimum standard, due for example to variations in manufacturing and/or to measurement uncertainty, but the product would be in compliance as long as the average efficiency of the basic model population conforms to the minimum standard. Following once again the tenets of probability, this means that if a sufficiently large number of units of a basic model were tested, the mean energy efficiency would meet the standard. To allow testing of small samples to establish compliance, the appliance standard rules in 10 CFR Part 430 incorporate specific statistical procedures for rating products for energy efficiency and use. In this rulemaking, the Department proposes to require use of such strict statistical procedures by manufacturers to rate products not covered by a VICP. But it is not proposing them for compliance determinations for products covered by VICP's, largely because verification testing by a VICP helps insure accurate efficiency ratings.

Although the Department recognizes that some accommodation by a VICP is appropriate to allow for reasonable levels of manufacturing variation and measurement uncertainty in covered products, it is concerned that manufacturers might take advantage of a tolerance band on verification testing results by consistently over-rating the energy use or efficiencies of basic models. Such a problem might be indicated, for example, if verification test results were consistently skewed on the side of over-rating of basic models, rather than exhibiting a normal distribution whereby the proportion of

the verification test results that were higher than the rating submitted by the manufacturer was approximately equal to the proportion that were lower. The Department is concerned both that non-complying products might be rated as being in compliance and that complying products might be over-rated.

To address these concerns, today's proposed rule contains provisions to enable the Department to monitor the extent, if any, to which the energy efficiency or use of products covered by VICP's may be over-rated as a result of tolerance bands for verification testing results. These provisions would require VICP's to submit to the Department annually summary data on verification testing results. Specifically, the proposed rule would require VICP's to report the following for each verification test or round of verification tests on a basic model: (1) The model's energy efficiency or use as measured by the testing, (2) the energy efficiency or use rating submitted by the manufacturer for that basic model (*i.e.*, the rating that was evaluated by the testing), and (3) either the energy conservation standard for that basic model or a brief description of the basic model that would enable the Department to determine the applicable standard. The data would not include manufacturer identification. If it appeared to the Department from this information that over-rating was occurring, the Department would consider one or more of the following actions:

- Pursue modification of all or part of the VICP's provisions for verification testing;
- Revoke the Department's certification of the VICP; or
- Pursue enforcement procedures.

III. Procedural Requirements

A. Review Under the National Environmental Policy Act of 1969

EPCA prescribes energy efficiency standards and test procedures for commercial equipment, and in today's rule, the Department proposes to implement these requirements for commercial warm air furnaces and, to some extent, commercial heating, air conditioning and water heating equipment generally. The Department has reviewed the proposed rule under the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §§ 4321 *et seq.*, the regulations of the Council on Environmental Quality, 40 CFR parts 1500–1508, the Department's regulations for compliance with NEPA, 10 CFR Part 1021, and the Secretarial Policy on the National Environmental Policy Act (June 1994). Implementation

of the Proposed rule would not result in environmental impacts. The Department has therefore determined that the proposed rule is covered under the Categorical Exclusion found at paragraph A6 of appendix A to subpart D of the Department's NEPA Regulations, which applies to rulemakings that are strictly procedural. Accordingly, neither an environmental assessment nor an environmental impact statement is required.

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

Today's rule has been determined not to be a "significant regulatory action," as defined in section 3(f) of Executive Order 12866, "Regulatory Planning and Review," 58 FR 51735 (October 4, 1993). Accordingly, this action was not subject to review under the Executive Order by the Office of Information and Regulatory Affairs.

C. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act of 1980, 5 U.S.C. § 603, requires the preparation of an initial regulatory flexibility analysis for every rule which, by law, the agency must propose 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 Small Business Administration considers an entity to be a small business if, together with its affiliates, it employs fewer than a threshold number of workers specified in 13 CFR part 121. The estimated number of affected small businesses are discussed below.

- The threshold number of employees for SIC classification 3585, which includes warm-air furnaces, is 750. The Department estimates that between 25 and 39 firms manufacture warm-air furnaces, and of these the majority have fewer than 750 employees and are considered small businesses. The number of these small businesses that manufacture commercial warm-air furnaces covered by the EPACT standards (with capacities of 225,000 Btu per hour and above) could be smaller.

- The threshold number for SIC classification 3585, which includes air conditioners and heat pumps, is also 750. The Department estimates that approximately 31 firms manufacture covered commercial air conditioners and heat pumps, and of these, 14 are considered small businesses.

- The threshold number for SIC classification 3433, which includes commercial packaged boilers, and other non-electric heating equipment, is 500. The Department estimates that no more than 29 firms manufacture commercial packaged boilers, and of these, the majority are considered small businesses. The number of small businesses that manufacture commercial-sized packaged boilers covered by the EPACT standards (with capacities of 300,000 Btu per hour and above) could be smaller.

- The threshold number for SIC classification 3589, which includes commercial water heaters, along with other service industry machinery not elsewhere classified, is also 500. The Department estimates that approximately 25 firms manufacture water heaters and unfired hot water storage tanks, and of these the majority are considered small businesses. The number of small businesses that manufacture commercial-sized equipment covered by the EPACT standards could be smaller.

EPCA establishes efficiency standards for commercial heating, air conditioning and water heating equipment and requires the Department to prescribe test procedures that are accepted by industry and referenced in ASHRAE/IES Standard 90.1. For the most part, EPCA specifies the standards and test procedures incorporated in today's proposed rule. Therefore, any costs of complying with them are imposed by EPCA and not the rule. Moreover, today's proposed rule codifies testing procedures that are already generally employed by manufacturers, both large and small. The proposed rule also prescribes procedures for manufacturers to certify compliance with the standards and test procedures legislated by EPCA, using powers which were originally granted to the Secretary under NAECA, and extended by EPACT to require manufacturers of covered commercial equipment to submit information and reports for a variety of purposes, including insuring compliance with requirements. These certification requirements, as well as proposed enforcement provisions, are new for manufacturers of commercial equipment and will affect both small and large enterprises.

The Department has drafted the proposed rule to minimize the burden of compliance for manufacturers, and the rule relies heavily on current industry practice. Statistical sampling is permitted for testing, so as to minimize the testing burden. Manufacturers that participate in VICP's are also afforded considerable latitude in designing

sampling plans to suit their individual circumstances, consistent with the requirement for reasonable degrees of reliability. To minimize testing burden further, manufacturers are permitted to use analytical procedures, such as computer simulation, to determine the efficiencies of their products. Manufacturers are also given the option of certifying their products to the Department independently or through trade associations, which can minimize costs by reporting on large numbers of individual products at one time. Finally, the certification forms and enforcement procedures are similar to those already required for consumer products, and several of the same manufacturers produce both consumer products and commercial equipment.

The cost of establishing compliance will depend on the number of basic models a manufacturer produces. The cost of completing the compliance certification form should be negligible once testing has occurred. Testing cost depends on unit size, but could amount to several thousands of dollars per basic model. To the extent that manufacturers must already test their products for efficiency to assure that they meet the existing statutory efficiency standards, or for any other reason, they will not incur new costs in complying with today's proposed rule. The Department believes that any significant economic impact will fall only on those firms which do not now routinely test their products. The Department further believes that testing is a widely accepted practice, and that companies that do not test are rare and do not represent a substantial number of small entities.

The Department has limited discretion to apply different requirements to small manufacturers. EPCA mandates uniform standards and test procedures for commercial equipment. In this regard, it is noteworthy that although EPCA contains a "small manufacturer exemption" for consumer appliances (42 USC 6295 (t)), it includes no such exemption for commercial and industrial equipment.

The Department invites public comment on its conclusion that the incremental costs of complying with the proposed rule (not including the cost of requirements that are directly imposed by EPCA, such as the energy efficiency standards themselves) would not impose a significant impact on a substantial number of small businesses.

D. Review Under Executive Order 13132

Executive Order 13132 (64 FR 43255, August 4, 1999) imposes certain

requirements on agencies formulating and implementing policies or regulations that preempt State law or that have federalism implications. Agencies are required to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and carefully assess the necessity for such actions. The proposed rule published today would not regulate the States. The proposed rule would primarily codify energy efficiency standards and test procedures already established in EPCA for commercial equipment. DOE has determined that today's rule does 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. No further action is required by Executive Order 13132.

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

The Department has determined under 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.

F. Review Under the Paperwork Reduction Act

Today's notice of proposed rulemaking would impose information maintenance and reporting requirements on manufacturers of commercial heating, air conditioning and water heating equipment. An agency may not conduct or sponsor a collection of information unless the collection displays a currently valid OMB control number. (See 5 CFR 1320.5(b)).

The proposed rule will require manufacturers to maintain records concerning their determinations of the energy consumption and efficiency of covered commercial equipment. DOE believes that this recordkeeping is necessary for implementing and monitoring compliance with energy conservation standards and testing provisions mandated by EPCA. The proposed rule would also require manufacturers to make a one-time submission of a compliance statement, and to submit certification reports for existing basic models of covered commercial equipment, within 12

months after the publication of a final rule in the **Federal Register**. A report covering a basic model need only be submitted once, stating that the manufacturer has determined that the basic model meets the applicable energy conservation standard. After the initial submission, manufacturers will have to submit a certification report for each new basic model before the model may be distributed in commerce, or to certify compliance with a new or amended standard.

The proposed collections of information are necessary for implementing and monitoring compliance with the efficiency standards and testing requirements for commercial equipment mandated by EPCA. In developing the proposed information collection requirements, DOE considered the views of stakeholders that were received at two public workshops held during April and October 1998, in written comments solicited in the notice of those meetings, and in subsequent informal contacts.

The following are the DOE estimates of the total annual reporting and recordkeeping burden imposed on the affected manufacturing firms for compliance with the proposed rule. The Department estimates that the number of hours required to comply with the reporting and recordkeeping requirements in the proposed rule is approximately 200 to 300 hours per year per firm.

- For commercial warm-air furnaces, the estimated number of covered manufacturing firms is between 25 and 39. The total annual reporting and recordkeeping burden from compliance with the proposed rule is expected to be from 5,000 to 11,700 hours (25×200 to 39×300 hours per year).

- For small and large commercial air conditioners and heat pumps, the estimated number of covered manufacturing firms is no more than 31. The total annual reporting and recordkeeping burden from compliance with the proposed rule is expected to be from 6,200 to 9,300 hours (31×200 to 31×300 hours per year).

- For commercial packaged boilers, the estimated number of covered manufacturing firms is no more than 29. The total annual reporting and recordkeeping burden from compliance with the proposed rule is expected to be from 5,800 to 8,700 hours (29×200 to 29×300 hours per year).

- For commercial water heaters and unfired hot water storage tanks, the estimated number of covered manufacturing firms is no more than 25. The total annual reporting and recordkeeping burden from compliance

with the proposed rule is expected to be from 5,000 to 7,500 hours (25×200 to 25×300 hours per year).

The above estimates include time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing the collection of information.

In developing the burden estimates, DOE considered that each manufacturer is required to comply with the statutory energy efficiency standards for each type of commercial equipment it is manufacturing on the effective date of the Act, and for each model it begins to manufacture after that date. The required certification would contain the type of information that many manufacturers already submit to voluntary programs or develop for the design or marketing of energy efficient commercial equipment. Those manufacturers should be able to comply with the certification required by the proposed rule without much additional burden. And, finally, the Department believes, based on manufacturers' statements as to their determinations of product performance, that they already maintain the records of efficiency determinations that the proposed rule would require them to keep.

The Department has submitted these proposed information collection and recordkeeping requirements to the Office of Management and Budget for review and approval under the Paperwork Reduction Act, 44 U.S.C. 3501, *et seq.* The OMB previously approved Appendix A to Subpart F of Part 430, "Compliance Statement and Certification Report," and assigned OMB control number 1910-1400. The proposed rule would revise these forms to cover certification of commercial heating, air conditioning and water heating equipment; facilitate the use of the certification report by third party representatives of covered product manufacturers; and in an attachment, specify forms similar to those that manufacturers are currently required to submit to DOE by 10 CFR Part 430.62(a)(2).

The Department considers the information collection and recordkeeping called for in this proposed rule to be the least burdensome possible for meeting the legal requirements of EPCA and effectively enforcing the provisions of the law. However, the Department encourages public comments concerning the anticipated paperwork reporting burden. Send comments regarding recordkeeping or reporting burdens, or any other aspect of information collection, to the

Department in accordance with the instructions in the **DATES** and **ADDRESSES** sections of this notice, as well as in Section IV below. Send a copy of the same comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked "Attention: Desk Officer for DOE."

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 requirements: (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 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) provide 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 agencies to review regulations in light of applicable standards Section 3(a) and Section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them.

The Department reviewed today's proposed rule under the standards of Section 3 of the Executive Order and determined that, to the extent permitted by law, it meets the requirements of those standards.

H. Review Under Section 32 of the Federal Energy Administration Act of 1974

Under section 301 of the Department of Energy Organization Act (Pub. L. 95-91), the Department of Energy 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. Section 32 provides in essence that, where a proposed rule contains or involves use of commercial

standards, the notice of proposed rulemaking must inform the public of the use and background of such standards.

This rule proposed in this notice incorporates a several commercial standards which EPCA requires to be used. These include testing standards referenced by ASHRAE/IES Standard 90.1-1989 for the measurement of steady state thermal efficiency of commercial warm air furnaces. Because the Department has very limited discretion to depart from the standards referenced in ASHRAE/IES 90.1, Section 32 of the FEAA does not apply to them.

Two commercial standards incorporated in this rule are not referenced by ASHRAE/IES Standard 90.1-1989, and are thus their use is not required by EPCA. One is ASHRAE Standard 103-1993, "Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers." The Department proposes to adopt portions of this standard to obtain a suitable test procedure for condensing furnaces, which are not covered by ASHRAE/IES Standard 90.1-1989. The other is the Hydronics Institute (HI) Standard "Testing and Rating Standard for Heating Boilers," which specifies a flue loss calculation procedure for oil-fired equipment, also not covered by ASHRAE/IES Standard 90.1-1989. The Department has evaluated these two standards and is unable to conclude whether they fully comply with the requirements of section 32(b) of the Federal Energy Administration Act, *i.e.*, that they were developed in a manner that which fully provides for public participation, comment and review.

As required by section 32(c) of the Federal Energy Administration Act, the Department will consult with the Attorney General and the Chairman of the Federal Trade Commission concerning the impact of these two standards on competition, prior to prescribing a final rule.

I. Review Under Unfunded Mandates Reform Act of 1995

Section 202 of the Unfunded Mandates Reform Act of 1995 ("Unfunded Mandates Act") requires that the Department prepare a budgetary impact statement before promulgating a rule that includes a Federal mandate that may result in expenditure by state, local, and tribal governments, in the aggregate, or by the private sector, of \$100 million or more in any one year. The budgetary impact statement must include: (i) Identification of the Federal law under which the rule is promulgated; (ii) a qualitative and

quantitative assessment of anticipated costs and benefits of the Federal mandate and an analysis of the extent to which such costs to state, local, and tribal governments may be paid with Federal financial assistance; (iii) if feasible, estimates of the future compliance costs and of any disproportionate budgetary effects the mandate has on particular regions, communities, non-Federal units of government, or sectors of the economy; (iv) if feasible, estimates of the effect on the national economy; and (v) a description of the Department's prior consultation with elected representatives of state, local, and tribal governments and a summary and evaluation of the comments and concerns presented.

The Department has determined that the action proposed today does not include a Federal mandate that may result in estimated costs of \$100 million or more to state, local or to tribal governments in the aggregate or to the private sector. Therefore, the requirements of Sections 203 and 204 of the Unfunded Mandates Act do not apply to this action.

J. Review Under the Plain Language Directives

The President's Memorandum on "Plain Language in Government Writing," 63 FR 31885 (June 10, 1998) directs each Federal agency to write all published rulemaking documents in plain language. The Memorandum includes general guidance on what constitutes "plain language." Plain language requirements will vary from one document to another, depending on the intended audience, but all plain language documents should be logically organized and clearly written.

DOE invites public comments on how to make this proposed rule easier to understand. For example:

- Are the requirements in the rule clearly stated?
- Would a different organization better suit your needs?
- Have we organized the material to suit your needs?
- Does the rule contain jargon or unnecessary technical language?
- Can we improve the rule's format?

K. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Pub. L. No. 105-277) requires federal agencies to issue a Family Policymaking Assessment for any proposed rule or policy that may affect family well-being. Today's proposal

would not have any impact on the autonomy or the integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

IV. Public Comment

A. Written Comment Procedures

The Department invites interested persons to participate in the proposed rulemaking by submitting data, comments, or information with respect to the issues set forth in today's rule to Mr. Cyrus Nasser, at the address indicated at the beginning of the notice. The Department will consider all submittals received by the date specified at the beginning of this notice in developing the final rule.

Under the provisions of Title 10 CFR 1004.11, any person submitting information which he or she believes to be confidential and exempt by law from public disclosure should submit one complete copy of the document and ten (10) copies, if possible, from which the information believed to be confidential has been deleted. The Department of Energy will make its own determination with regard to the confidential status of the information and treat it according to its determination.

Factors of interest to the Department when evaluating requests to treat as confidential information that has been submitted include: (1) A description of the items; (2) an indication as to whether and why such items are customarily treated as confidential within the industry; (3) whether the information is generally known by or available from other sources; (4) whether the information has previously been made available to others without obligation concerning its confidentiality; (5) an explanation of the competitive injury to the submitting person which would result from public disclosure; (6) an indication as to when such information might lose its confidential character due to the passage of time; and (7) why disclosure of the information would be contrary to the public interest.

B. Public Hearing

1. Procedures for Submitting Requests To Speak

The beginning of this notice of proposed rulemaking indicates the time and place of the public hearing. The Department invites any person who has an interest in today's notice of proposed rulemaking, or who is a representative of a group or class of persons that has an interest in these proposed rules, to request an opportunity to make an oral

presentation. If you would like to attend the public hearing, please notify Ms. Brenda Edwards-Jones at (202) 586-2945. You may also hand deliver requests to speak to the address indicated at the beginning of the notice between the hours of 8:00 a.m. and 4:00 p.m., Monday through Friday, except Federal holidays.

The person making the request should briefly describe the interest concerned and state why he or she, either individually or as a representative of a group or class of persons that has such an interest, is an appropriate spokesperson, and give a telephone number for contact.

The Department requests each person selected to be heard to submit an advance copy of his or her statement prior to the hearing as indicated at the beginning of this notice. The Department, at its discretion, may permit any person wishing to testify who cannot meet this requirement, to testify if that person has made alternative arrangements with the Office of Codes and Standards in advance. The letter making a request to give an oral presentation must ask for such alternative arrangements.

2. Conduct of Hearing

The Department will designate a Department official to preside at the hearing. The hearing will not be a judicial or an evidentiary-type hearing, but the Department will conduct it in accordance with 5 U.S.C. 553 and Section 336 of the Act. The Department of Energy reserves the right to select the persons to be heard at the hearing, to schedule the respective presentations, and to establish the procedures governing the conduct of the hearing.

The Department will permit each participant to make a prepared general statement, limited to five (5) minutes, prior to the discussion of specific topics. The general statement should not address these specific topics, but may cover any other issues pertinent to this rulemaking. The Department will permit other participants to briefly comment on any general statements. The Department will then divide the hearing into segments, with each segment consisting of one or more topics covered by this notice, as follows:

Test Procedures for Commercial Furnaces

- ASHRAE Referenced Test Standards.
- Definition of Thermal Efficiency.
- Test Procedures for the Measurement of Energy Efficiency.
- Other Test Standard Topics.

Certification and Enforcement Procedures for Commercial Heating, Air Conditioning and Water Heating Equipment

- Certification.
- Alternative Methods for Determining Efficiency.
- Voluntary Independent Certification Programs.
- Non-Participating Manufacturers.
- Other Certification and Enforcement Topics.

The Department will introduce each topic with a brief summary of the relevant provisions of the proposed rule, and the significant issues involved. The Department will then permit participants in the hearing to make a prepared statement limited to five (5) minutes on that topic. At the end of all prepared statements on a topic, the Department will permit each participant to briefly clarify his or her statement and comment on statements made by others. The Department is particularly interested in having participants address in their statements the specific issues set forth below in Section IV—C, “Issues on which Comments are Requested,” and participants should be prepared to answer questions by the Department and other participants at the public hearing concerning these issues. Representatives of the Department may also ask questions of participants concerning other matters relevant to the hearing. The total cumulative amount of time allowed for each participant to make prepared statements must be 20 minutes.

The official conducting the hearing will accept additional comments or questions from those attending, as time permits. The presiding official will announce any further procedural rules, or modification of the above procedures, needed for the proper conduct of the hearing.

The Department will arrange for a transcript of the hearing, and will retain the entire record of this rulemaking, including the transcript, and will make it available for inspection in the Department’s Freedom of Information Reading Room. Any person may purchase a copy of the transcript from the transcribing reporter.

C. Issues on Which Comments Are Requested

The Department of Energy is interested in receiving comments and/or data concerning the feasibility, workability and appropriateness of the test procedures and certification and enforcement program proposed in today’s rulemaking. Also, the Department welcomes discussion on

improvements or alternatives to the proposed approaches. In particular, the Department requests comments on whether it should require manufacturers not participating in a VICP to have their equipment tested by, or under the supervision of, independent laboratories or personnel. And if such a requirement is retained in the final rule, should the Department impose specific competency criteria or qualification requirements to ensure accurate and reliable testing? Such measures might include laboratory accreditation, professional engineering registration or other similar demonstration of testing competence.

List of Subjects in 10 CFR Part 431

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

Issued in Washington, DC, on November 10, 1999.

Dan W. Reicher,

Assistant Secretary, Energy Efficiency and Renewable Energy.

For the reasons set forth in the preamble, Title 10, Part 431 of the Code of Federal Regulations (CFR) is proposed to be amended as set forth below:

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

1. The authority citation for part 431 continues to read as follows:

Authority: 42 U.S.C. 6311–6316.

2. Subparts H and I are added to read as follows:

Subpart H—Definitions for Commercial HVAC & WH Products

Sec.

431.141 Definitions.

Subpart I—Commercial Warm Air Furnaces

431.151 Purpose and scope.

Test Procedures

431.161 Materials incorporated by reference.

Sec. 431.162 Uniform test method for the measurement of energy efficiency of commercial warm air furnaces.

Energy Conservation Standards

431.171 Energy conservation standards and their effective dates.

Subpart H—Definitions for Commercial HVAC & WH Products

§ 431.141 Definitions.

For purposes of subparts I through P, words are defined as provided for in section 340 of the Act and as follows—

Act or EPCA means the Energy Policy and Conservation Act, 42 U.S.C. 6291–6317.

Alternate efficiency determination method or AEDM means a method of calculating the efficiency of a commercial HVAC & WH product, in terms of the descriptor used in or under section 342 (a) of the Act to state the energy conservation standard for that product.

Basic model means all units of a commercial HVAC & WH product manufactured by one manufacturer which have the same primary energy source and which do not have any differing electrical, physical, or functional characteristics that affect energy consumption.

Batch means a collection of production units of a basic model from which a test sample is selected.

Batch size means the number of units in a batch.

Btu means British thermal unit, which is the quantity of heat required to raise the temperature of one pound of water one degree Fahrenheit.

Commercial HVAC & WH product means any article of a type which meets the statutory definition of “covered equipment” under section 340(1)(B)—(F) of the Act, and to which an energy conservation standard is applicable under section 342(a) of the Act.

Commercial warm air furnace means a warm air furnace that is a commercial HVAC & WH product.

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

DOE or the Department means the Department of Energy.

Flue loss means the sum of the sensible heat and latent heat above room temperature of the flue gases leaving the appliance.

Independent laboratory means a laboratory or test facility not controlled by, affiliated with, having financial ties with, or under common control with the manufacturer or distributor of the covered equipment being evaluated.

Independent testing personnel means an individual, or an employee of an organization, not controlled by, affiliated with, having financial ties with, or under common control with the manufacturer or distributor of the covered equipment being evaluated.

Manufacturer’s model number means the identifier used by a manufacturer to uniquely identify the group of identical or essentially identical commercial equipment to which a particular unit belongs. The manufacturer’s model number typically appears on equipment nameplates, in equipment catalogs and in other product advertising literature.

Natural gas means natural gas as defined by the Federal Power Commission.

Private labeler means an owner of a brand or trade mark on the label of a commercial HVAC & WH product which bears a private label. A commercial HVAC & WH product bears a private label if:

(1) Such product (or its container) is labeled with the brand or trademark of a person other than a manufacturer of such product,

(2) The person with whose brand or trademark such product (or container) is labeled has authorized or caused such product to be so labeled, and

(3) The brand or trademark of a manufacturer of such product does not appear on such label.

Secretary means the Secretary of the Department of Energy.

State means a State, the District of Columbia, Puerto Rico, or any territory or possession of the United States.

State regulation means a law or regulation of a State or political subdivision thereof.

Thermal efficiency means the efficiency descriptor for warm air furnaces and equals 100 percent minus percent flue loss determined using test procedures prescribed under § 431.162.

Warm air furnace means a self-contained oil-fired or gas-fired furnace designed to supply heated air through ducts to spaces that require it and includes combination warm air furnace/electric air conditioning units but does not include unit heaters and duct furnaces.

Subpart I—Commercial Warm Air Furnaces

§ 431.151 Purpose and scope.

This subpart contains energy conservation requirements for certain commercial warm air furnaces, pursuant to Part C of Title III of the Energy Policy and Conservation Act, as amended, 42 U.S.C 6311–6316.

Test Procedures

§ 431.161 Materials incorporated by reference.

(a) The Department incorporates by reference the following test procedures which are not otherwise set forth in this part 431. The Director of the Federal Register has approved the material listed in paragraph (b) of this section for incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Any subsequent amendment to this material by the standard-setting organization will not affect the DOE test procedures unless and until DOE amends its test

procedures. The Department incorporates the material 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**.

(b) List of test procedures incorporated by reference.

(1) American National Standards Institute (ANSI) Standard Z21.47–1993, “Gas-Fired Central Furnaces.”

(2) Underwriters Laboratories (UL) Standard 727–1994, “Standard for Oil-Fired Central Furnaces.”

(3) Sections 8.2.2, 11.2, and 11.2.1, and accompanying Forms 715 and 721, of the Hydronics Institute (HI) Standard “Testing and Rating Standard for Heating Boilers,” 6th Edition, 1989.

(4) Sections 7.2.2.4, 7.8, 9.2, and 11.3.7 of the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE) Standard 103–1993, “Method of Testing for Annual Fuel Utilization Efficiency of Residential Central Furnaces and Boilers.”

(c) *Availability of references.* (1) *Inspection of test procedures.* The test procedures incorporated by reference are available for inspection at:

(i) Office of the Federal Register 800 North Capitol Street, NW, Suite 700, Washington, DC 20002.

(ii) U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Hearings and Dockets, “Test Procedures and Certification Requirements for Commercial Warm Air Furnaces,” Docket No. EE–RM/TP–99–450, 1000 Independence Avenue, SW, Washington, DC 20585.

(2) Obtaining copies of Standards. Anyone can obtain a copy of standards incorporated by reference from the following sources:

(i) Request copies of the ASHRAE Standards from the American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc., 1971 Tullie Circle, NE, Atlanta, GA 30329, or <http://www.ashrae.org/book/bookshop.htm>.

(ii) Request copies of the ANSI Standards from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112, or <http://global.ihs.com/>, or <http://webstore.ansi.org/ansidocstore/>.

(iii) Request copies of the UL Standards from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112, or <http://global.ihs.com/>.

(iv) Request copies of the HI Standards from the Hydronics Institute Inc., 35 Russo Place, Berkeley Heights, N.J. 07922.

§ 431.162 Uniform test method for the measurement of energy efficiency of commercial warm air furnaces.

(a) This section covers the test procedures you must follow if, pursuant to EPCA, you are measuring the steady state thermal efficiency of a gas-fired commercial warm air furnace or any oil-fired commercial warm air furnace, with capacity of 225,000 Btu/h or more. Where this section prescribes use of ANSI standard Z21.47–1993 or UL standard 727–1994, perform for purposes of this section only the procedures pertinent to the measurement of steady-state efficiency.

(b) *Test setup.* (1) *Test setup for Gas-Fired Commercial Warm Air Furnaces.* The test setup, including flue requirement, instrumentation, test conditions, and measurements for determining the thermal efficiency of gas-fired warm air furnaces with rated input of 225,000 Btu/h or more, is as specified in Sections 1.1 (Scope), 2.1 (General), 2.2 (Basic Test Arrangements), 2.3 (Test Ducts and Plenums), 2.4 (Test Gases), 2.5 (Test Pressures and Burner Adjustments), 2.6 (Static Pressure and Air Flow Adjustments), 2.37 (Thermal Efficiency), and 4.2.1 (Basic Test Arrangements for Direct Vent Control Furnaces) of the American National Standards Institute (ANSI) Standard for Gas-Fired Central Furnaces, ANSI Standard Z21.47–1993. The thermal efficiency test must be conducted only at the normal inlet test pressure, as specified in Section 2.5.1 of ANSI Z21.47–1993, and at the maximum hourly Btu input rating specified by the manufacturer for the product being tested.

(2) *Test setup for Oil-Fired Commercial Warm Air Furnaces.* The test setup, including flue requirement, instrumentation, test condition, and measurement for measuring the thermal efficiency of oil-fired warm air furnaces with rated input of 225,000 Btu/h or more, is as specified in sections 1 (Scope), 2 (Units of Measurement), 3 (Glossary), 37 (General), 38 and 39 (Test Installation), 40 (Instrumentation, except 40.4 and 40.6.2 through 40.6.7 which are not required for the thermal efficiency test), 41 (Initial Test Conditions), 42 (Combustion Test—Burner and Furnace), 43.2 (Operation Tests), 44 (Limit Control Cutout Test), 45 (Continuity of Operation Test), and 46 (Air Flow, Downflow or Horizontal Furnace Test), of the Underwriters Laboratories Standard for Oil-Fired Central Furnaces, UL Standard 727–1994. A fuel oil analysis for heating value, hydrogen content, carbon content, pounds per gallon, and API gravity must be conducted as specified

in section 8.2.2 of the 1989 Hydronics Institute Testing and Rating Standard for Heating Boilers. The steady-state combustion conditions, specified in section 42.1 of UL 727-1994, are attained as evidenced by variations in the measured flue gas temperature of not more than 5 °F for three consecutive readings taken 15 minutes apart.

(c) *Additional test measurements.* (1) *Measurement of Flue CO₂ (Carbon Dioxide) for Oil-Fired Furnaces.* In addition to the flue temperature measurement as specified in section 40.6.8 of UL Standard 727, you must locate one or two sampling tubes within six inches downstream from the flue temperature probe (as indicated on Figure 40.3 of UL Standard 727). If you use an open end tube, it must project into the flue one-third of the chimney connector diameter. If you use other methods of sampling CO₂, you must place the sampling tube so as to obtain an average sample. There must be no air leak between the temperature probe and the sampling tube location. You must collect the flue gas sample at the same time the flue gas temperature is recorded. The CO₂ concentration of the flue gas must be as specified by the manufacturer for the product being tested, with a tolerance of ±0.1%. You must determine the flue CO₂ with an instrument providing a reading with an error no greater than ±0.1%.

(2) *Procedure for the Measurement of Condensate for a Gas-Fired Condensing Furnace.* The test procedure for the measurement of the condensate from the flue gas under steady state operation must be conducted as specified in sections 7.2.2.4, 7.8 and 9.2 of the American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Inc. (ASHRAE) Standard 103-1993 under the maximum rated input conditions. You must conduct this condensate measurement for an additional 30 minutes of steady state operation after the completion of the steady state thermal efficiency test specified in paragraph (b) of this section.

(d) *Calculations of Thermal Efficiency.* (1) *Gas-Fired Commercial Warm Air Furnaces.* You must use the calculation procedure as specified in section 2.37, Thermal Efficiency, of ANSI Standard Z21.47-1993.

(2) *Oil-Fired Commercial Warm Air Furnaces.* You must calculate the percent flue loss and the steady state efficiency by following the procedure specified in section 11.2 (Combustion Efficiency Test), and Forms 715 and 721, of the 1989 Hydronics Institute (HI) Testing and Heating Standard for

Heating Boilers. The thermal efficiency must be calculated as:

Thermal Efficiency (percent) = 100 percent—flue loss (percent).

(e) *Procedure for the Calculation of the Additional Heat Gain and Heat loss, and Adjustment to the Thermal Efficiency for a Condensing Furnace.* (1) You must calculate the latent heat gain from the condensation of the water vapor in the flue gas, and calculate heat loss due to the flue condensate down the drain, as specified in sections 11.3.7.1 and 11.3.7.2 of ASHRAE Standard 103-1993, with the exception that in the equation for the heat loss due to hot condensate flowing down the drain in section 11.3.7.2, the assumed indoor temperature of 70 °F and the temperature term T_{OA} must be replaced by the measured room temperature as specified in section 2.2.8 of ANSI Z21.47-1993.

(2) *Adjustment to the Thermal Efficiency for Condensing Furnace.* You must adjust the thermal efficiency as calculated in paragraph (d)(1) of this section by adding the latent gain from the condensation of the water vapor in the flue gas and subtracting the heat loss (due to the flue condensate down the drain) to obtain the thermal efficiency of a condensing furnace.

Energy Conservation Standards

§ 431.171 Energy conservation standards and their effective dates.

Each commercial warm air furnace manufactured on or after January 1, 1994 must meet the following energy efficiency standard levels:

(a) For a gas-fired commercial warm air furnace with capacity of 225,000 Btu per hour or more, the thermal efficiency at the maximum rated capacity must be not less than 80 percent.

(b) For an oil-fired commercial warm air furnace with capacity of 225,000 Btu per hour or more, the thermal efficiency at the maximum rated capacity must be not less than 81 percent.

3. Subparts J, K, L and M are added to read as follows:

Subpart J—Commercial Air Conditioners and Heat Pumps [Reserved]

Subpart K—Commercial Packaged Boilers [Reserved]

Subpart L—Commercial Water Heaters and Unfired Hot Water Storage Tanks [Reserved]

Subpart M—Methods of Determining Efficiency of Commercial HVAC & WH Products.

Sec.

- 431.481 Requirements applicable to all manufacturers.
- 431.482 Additional requirements applicable to VICEP participants.
- 431.483 Additional requirements applicable to non-VICEP participants.
- 431.484 Voluntary independent certification programs (VICEP).

Subpart M—Methods of Determining Efficiency of Commercial HVAC & WH Products.

§ 431.481 Requirements applicable to all manufacturers.

(a) *General.* A manufacturer of a commercial HVAC & WH product may not distribute any basic model of such product in commerce unless the manufacturer has determined the efficiency of the basic model either from testing of the basic model or from application of an alternative efficiency determination method (AEDM) to the basic model, in accordance with the requirements of this section. (For purposes of this subpart, the “efficiency” of a commercial HVAC & WH product means the energy efficiency or energy use of that product, expressed in terms of the descriptor that is used in or under Section 342(a) of the Act to state the energy conservation standard for that product.)

(b) *Testing.* If you test a basic model pursuant to this section to determine its efficiency or to validate an AEDM, you must:

- (1) Select at random the unit(s) to be tested, which must be representative of the basic model,
- (2) Perform the testing in accordance with the applicable DOE test procedure,
- (3) Meet industry standards for the accuracy of testing and of rating results for the equipment being tested, and
- (4) Meet the requirements of either section 431.482(b) or section 431.483(a), whichever is applicable.

(c) *Alternative efficiency determination methods.*

(1) *Criteria an AEDM must satisfy.* You may not apply an AEDM to a basic model to determine its efficiency pursuant to this subpart unless,

(i) The AEDM is derived from a mathematical model that accurately represents the energy consumption characteristics of the basic model, and

(ii) The AEDM is based on engineering or statistical analysis, computer simulation or modeling, or other analytic evaluation of performance data.

(2) *Subsequent verification of an AEDM.* If you have used an AEDM pursuant to this subpart,

(i) You must have available for inspection by the Department records showing:

(A) The method or methods used;

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

(C) Complete test data, product information, and related information that you generated or acquired under paragraph (c)(1) of this section and §§ 431.482(c) or 431.483(b)(1), as applicable, and

(D) The calculations used to determine the average efficiency and energy consumption of each basic model to which an AEDM was applied.

(ii) If requested by the Department, you must:

(A) Conduct simulations to predict the performance of particular basic models of the commercial HVAC & WH product, or

(B) Provide analyses of previous simulations conducted by you, or

(C) Conduct sample testing of basic models selected by the Department, or

(D) Conduct a combination of these.

§ 431.482 Additional requirements applicable to VICP participants.

(a) *Description of VICP participant.*

For purposes of this subpart, a manufacturer that participates in a Voluntary Independent Certification Program (VICP) approved by the Department for a commercial HVAC & WH product, as described in § 431.484, and that complies with all requirements imposed by that program, is a "VICP participant" with respect to that product.

(b) *Testing.* A VICP participant that tests a basic model pursuant to this subpart must use statistically valid and accurate methods to arrive at the efficiency rating of such basic model.

(c) *Alternative efficiency determination methods.* Before using an AEDM to determine the efficiency of a basic model pursuant to this subpart, a VICP participant must apply the AEDM to one or more basic models that have been tested in accordance with §§ 431.481(b) and 431.482(b) of this

subpart, and the predicted efficiency calculated for each such basic model from application of the AEDM must be within five percent of the efficiency determined from testing that basic model. In addition, the predicted efficiency(ies) calculated for the tested basic model(s) must on average be within one percent of the efficiency(ies) determined from testing such basic model(s).

§ 431.483 Additional requirements applicable to non-VICP participants.

If you are a manufacturer that is not a VICP participant with respect to a particular commercial HVAC & WH product, you must meet the following requirements as to that product.

(a) *Testing.* You must perform any testing of a basic model pursuant to this subpart under the supervision of independent testing personnel, or have such testing performed at an independent laboratory. In addition, you must test a sufficient number of units of the basic model, and the efficiency rating of the basic model must be determined, such that,

(1) Any represented value of energy efficiency is no greater than the lower of the mean of the sample, or the lower 95 percent confidence limit of the true mean divided by 0.95, and,

(2) Any represented value of energy usage is no less than the greater of the mean of the sample, or the upper 95 percent confidence limit of the true mean divided by 1.05.

(b) *Alternative efficiency determination methods.* Before using an AEDM to determine the efficiency of a basic model pursuant to this subpart, you must first,

(1) Apply the AEDM to three or more basic models that have been tested in accordance with §§ 431.481(b) and 431.483(a) of this subpart. The predicted efficiency calculated for each such basic model from application of the AEDM must be within five percent of the efficiency determined from testing that basic model, and the predicted efficiencies calculated for the tested basic models must on average be within one percent of the efficiencies determined from testing such basic models; and

(2) Obtain from the Department approval of the AEDM. The Department will provide such approval after receiving from you documentation which establishes that the AEDM satisfies the requirements of §§ 431.481(c)(1) and 431.483(b)(1) of this subpart.

§ 431.484 Voluntary independent certification programs (VICP).

(a) The Department will approve a voluntary independent certification program (VICP) for a commercial HVAC & WH product if the VICP meets all of the following criteria:

(1) The program publishes its operating procedures in written form, and permits participation by all manufacturers of products covered by the program so long as they comply with the VICP's requirements concerning operation of the program.

(2) The program requires each participant to report to the program the efficiency of each basic model that the participant manufactures and that is covered by the program. The participant must determine such efficiency based on measurement of the basic model's performance.

(3) The program publishes the efficiency ratings received from each participant, or otherwise makes the ratings readily available to the general public and to the Department.

(4) The program conducts periodic verification testing on listed equipment, by testing the efficiency of each basic model at least once every five years and comparing its rated efficiency to the test results.

(5) An independent laboratory conducts the tests, or independent laboratory personnel supervise the tests.

(6) For verification testing, the testing personnel select units randomly from the manufacturer's stock.

(7) The program uses efficiency testing in accordance with applicable DOE test procedures.

(8) The program's verification testing meets industry standards for the accuracy of testing and of rating results for the equipment being tested, and the program satisfactorily describes how it meets these standards.

(9) The program has an appropriate standard for determining whether the efficiency rating a manufacturer claims for a product is valid.

(10) The program requires that, if a basic model fails verification testing conducted by the VICP, the manufacturer of the basic model must remove it from production and sale if the verification testing results show it is not in compliance with EPCA efficiency standards, or correctly re-rate it if it complies with such standards. The program must also provide that a participating manufacturer will be expelled from the VICP if it does not comply with such requirements, and that the VICP will report to the Department verification test results that find the performance of a basic model not to meet EPCA efficiency standards.

(A basic model “fails” verification testing when the VICP has compared the basic model’s efficiency rating resulting from completion of that testing with the efficiency rating claimed by the manufacturer, and has determined that the rating claimed by the manufacturer is not valid.)

(11) The program provides for penalties or other incentives to encourage manufacturers to report accurate and reliable efficiency ratings.

(12) The program provides to the manufacturer copies of all records of completed verification testing performed on the manufacturer’s equipment covered by the program.

(13) The VICP provides to the Department annually data on the results of its verification testing during the previous 12 months, including the following for each basic model on which the VICP has performed verification testing:

(i) The measured efficiency from the verification testing,

(ii) The manufacturer’s efficiency rating, and

(iii) Either the applicable energy conservation standard or a description of the model sufficient to enable the Department to determine such standard.

(b) An organization seeking the Department’s approval of its voluntary independent certification program must submit to the Department written information which demonstrates that the program meets the requirements of paragraph (a) of this section. Approval will remain in force for five years, unless material changes occur in the program. In the event of changes, the VICP must promptly notify the Department, which may then rescind or continue the approval. The Department may at any time rescind its approval of a VICP upon determining that the program does not meet the requirements of paragraph (a) of this section.

4. Subparts N, O, and P are added to read as follows:

Subpart N—Labeling (Reserved)

Subpart O—Certification and Enforcement Provisions Applicable to Commercial HVAC & WH Products

Sec.

431.501 Purpose and scope.

431.502 Prohibited acts.

431.503 Compliance certification; general requirements.

431.504 Compliance certification; compliance statement.

431.505 Compliance certification; certification report.

431.506 Enforcement.

431.507 Enforcement; compliance determination procedure.

431.508 Cessation of distribution of a basic model.

431.509 Remedies.

431.510 Hearings and appeals.

Subpart P—General Provisions for Commercial HVAC & WH Products.

431.601 Petitions for waiver, and applications for interim waiver, of test procedure.

431.602 Preemption of state regulations for commercial HVAC & WH products.

431.603 Maintenance of records.

431.604 Imported equipment.

431.605 Exported equipment.

431.606 Subpoena.

431.607 Confidentiality.

Subpart O—Certification and Enforcement Provisions Applicable to Commercial HVAC & WH Products

§ 431.501 Purpose and scope.

This subpart sets out how manufacturers and private labelers can certify that their commercial HVAC & WH products comply with the applicable energy efficiency standards, and how the Department will enforce the provisions of the Act and 10 CFR Part 431 applicable to such products.

§ 431.502 Prohibited acts.

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

(1) 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;

(2) Failure of a manufacturer to supply at his expense a reasonable number of units of a covered commercial equipment to a test laboratory designated by the Secretary;

(3) 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

(4) 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 paragraph (a)(4) of this section will constitute a separate violation with respect to each unit of covered equipment, and each day of noncompliance with paragraphs (a)(1) through (3) of this section will 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) Having actual knowledge, or

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

§ 431.503 Compliance certification; general requirements.

(a) *General.* Beginning twelve months after the publication of the applicable test procedures, if you are a manufacturer or private labeler, you may not distribute in commerce any basic model of a commercial HVAC & WH product subject to an energy conservation standard under section 342(a) of the Act unless you have certified that the basic model complies with the requirements of the applicable standards, as follows:

(1) Submit to the Department a compliance statement, as described in § 431.504, and

(2) Submit to the Department, or have an authorized third party (such as a trade association or VICP) submit to the Department, a certification report as described in § 431.505.

(b) *New models.* (1) Prior to or concurrent with distributing in commerce any new model of a commercial HVAC & WH product, you must submit all information required under paragraph (a)(2) of this section for that model.

(2) Any change to an existing basic model which affects energy consumption will constitute the addition of a new basic model. If such a change neither alters compliance with the applicable energy conservation standard for the new basic model, nor will be a basis for giving the new basic model an efficiency rating that differs from the rating of the existing basic model, then you need not measure the efficiency of the new basic model. However, you must submit all information required by § 431.503(a)(2) for the new basic model.

(c) *Discontinued models.* (1) A model is discontinued when its production has ceased and it is no longer being distributed.

(2) You (or an authorized representative) must report such models to the Department at the address and in the manner described in paragraph (e) of this section. In such a report, for each

model, you must list: equipment type, the manufacturer's name, the private labeler name(s), if applicable, and the manufacturer's model number(s).

(d) *Amendment of information.* If information in a compliance statement or certification report previously submitted to the Department under this section is found to be incorrect, you (or an authorized representative) must submit the corrected information to the Department at the address and in the manner described in paragraph (e) of this section.

(e) *Correspondence with the Department.* Send any correspondence by certified mail to: Department of Energy, Office of Energy Efficiency and Renewable Energy, Office of Codes and Standards, 1000 Independence Avenue, SW, Washington, DC 20585-0121.

(f) Notices designating a change of third party representative must be sent to the Department at the address and in the manner described in paragraph (e) of this section.

§ 431.504 Compliance certification; compliance statement.

(a) You must send your compliance statement to the Department in the manner described in § 431.503 (e) signed by a corporate officer, and in the format set forth in the paragraph (b) of this section.

(b) *Statement contents.* Your compliance statement must certify that:

(1) Each basic model you manufacture of the commercial HVAC & WH product covered by the compliance statement complies with the applicable energy conservation standards;

(2) All representations as to efficiency in your compliance certification and certification report(s) are based on testing and/or use of an AEDM in accordance with 10 CFR part 431;

(3) All information reported in your compliance statement and certification report(s) is true, accurate and complete; and

(4) You are 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.

(c) *Statement format.* You must use the following format for your compliance statement:

Statement of Compliance With Energy Conservation Standards for Commercial HVAC & WH Products

Product: _____

Manufacturer's Name and Address: _____

[Company name] submits this compliance statement under 10 CFR Part 431 (Energy Conservation Program for Commercial Equipment) and Part C of the Energy Policy and Conservation Act (Pub. L. 94-163), and amendments thereto. I am signing this on behalf of and as a responsible official of the above named company. All basic models of [the commercial HVAC & WH product covered by this statement] that the company manufactures comply with the applicable energy conservation standards. We have complied with the applicable testing requirements (prescribed in 10 CFR Part 431) in making this determination, and in determining the energy efficiency or energy use that is set forth in the certification report for each of these basic models. All information in that report and in this statement 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 statement to the Federal Government.

Signature of Company Official: _____

Name: _____

Title: _____

Firm or Organization: _____

Date: _____

Name of Person to Contact for Further Information: _____

Name: _____

Address: _____

Telephone Number: _____

Facsimile Number: _____

Third Party Representative: _____

If a third party organization, under the provisions of 10 CFR Part 431, prepared any part of this Compliance Certification, or is authorized to submit any certification report(s) for the company, provide the following information for the company official who authorized third party representations:

Name: _____

Title: _____

Address: _____

Telephone Number: _____

Facsimile Number: _____

The third party organization authorized to act as representative: _____

Third Party Organization: _____

Name of Responsible Person at that Organization: _____

Address: _____

Telephone Number: _____

Facsimile Number: _____

§ 431.505 Compliance certification; certification report.

(a) You, or an authorized third party acting on your behalf, must send your certification report(s) to the Department in the manner specified in § 431.503(e), signed by an official or your company or the third party representative. The Department will also accept a computer diskette which contains the certification report.

(b) *Report contents.* The certification report must include the equipment type, manufacturer's name, private labeler name(s) (if applicable), the manufacturer's model number(s), and

(1) For gas-fired and oil-fired commercial warm air furnaces (with a capacity of 225,000 Btu per hour or more), the minimum thermal efficiency at the maximum rated capacity;

(2) For gas-fired and oil-fired commercial packaged boilers, the minimum combustion efficiency at the maximum rated capacity;

(3) For air-cooled three-phase electric central air conditioners and central air conditioning heat pumps less than 65,000 Btu per hour (cooling capacity), split systems or single package, the seasonal energy efficiency ratio and the heating seasonal performance factor;

(4) For air-cooled central air conditioners and central air conditioning heat pumps at or above 65,000 Btu per hour (cooling capacity) and less than 135,000 Btu per hour (cooling capacity), the energy efficiency ratio (at a temperature rating of 95°F dry bulb temperature) and the coefficient of performance in the heating mode (at a temperature rating of 47°F dry bulb temperature);

(5) For water-cooled, evaporatively-cooled and water-source central air conditioners and central air conditioning heat pumps of less than 135,000 Btu per hour (cooling capacity), the energy efficiency ratio (at a standard rating of 95°F dry bulb temperature, for evaporatively cooled equipment, and 85°F entering water temperature, for water-source and water-cooled equipment);

(6) For water-source heat pumps less than 135,000 Btu per hour (cooling capacity), the coefficient of performance in the heating mode (at a standard rating of 70°F entering water temperature);

(7) For air-cooled central air conditioners and central air conditioning heat pumps at or above 135,000 Btu per hour (cooling capacity) and less than 240,000 Btu per hour (cooling capacity), the energy efficiency ratio (at a standard rating of 95°F dry bulb temperature) and the coefficient of performance in the heating mode (at a high temperature rating of 47°F dry bulb temperature);

(8) For water- and evaporatively-cooled central air conditioners and central air conditioning heat pumps at or above 135,000 Btu per hour (cooling capacity) and less than 240,000 Btu per hour (cooling capacity), the energy efficiency ratio (according to ARI Standard 340/360-93);

(9) For packaged terminal air conditioners, the energy efficiency ratio

(EER) in the cooling mode (at a temperature rating of 95°F dry bulb temperature);

(10) For packaged terminal heat pumps, the energy efficiency ratio (EER) in the cooling mode (at a temperature rating of 95°F dry bulb temperature), and the coefficient of performance (COP) in the heating mode (at a standard rating of 47°F dry bulb temperature);

(11) For storage water heaters (except those having more than 140 gallon storage capacity, not having a standing pilot light, and having the tank surface area thermally insulated to R-12.5) manufactured on or after January 1, 1994, the maximum standby loss, in percent per hour;

(12) For instantaneous water heaters (except those having more than 140 gallon storage capacity, not having a standing pilot light, and having the tank surface area thermally insulated to R-12.5), the minimum thermal efficiency, and for storage volumes of 10 gallons or more, the maximum standby loss, in percent per hour; and

(13) For unfired hot water storage tanks (except those having more than 140 gallon storage capacity, and having the tank surface area thermally insulated to R-12.5), the maximum heat loss in Btus per hour square foot of nominal tank surface area.

(c) One possible format for a certification report is as follows:

Certification report for commercial equipment: (Insert the Name of Equipment)

Dated: _____

Signature of Company Official or Third Party Representative: _____

Equipment Type: _____

Manufacturer: _____

Private Labeler (if applicable): _____

For New or Amended Basic Models:

(Provide specific equipment information including, for each basic model, the manufacturer's model number(s) and the information required in § 431.505 (b)).

For Discontinued Basic Models:

(Provide manufacturer's model number(s)).

§ 431.506 Enforcement.

(a) *Test notice.* Upon receiving information in writing concerning the energy performance of a particular commercial HVAC & WH product sold by a manufacturer or private labeler which indicates that the product may not be in compliance with the applicable energy performance standard, the Secretary may conduct a review of test records. The Secretary may then conduct enforcement testing of that equipment by means of a test notice addressed to the manufacturer or private labeler 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 compliance with the applicable efficiency standard. In addition, where compliance of a basic model was certified based on an AEDM, the Department has the discretion to pursue the provisions of § 431.481(c)(2)(ii) prior to invoking the test notice procedure. A representative designated by the Secretary must be permitted to observe any reverification procedures undertaken according 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 and will be mailed or delivered by the Department to the plant manager or other responsible official designated by the manufacturer.

(3) The test notice will specify the model or basic model to be selected for testing, the number of units to be tested, the method for selecting these units, the date and time at which testing is to begin, 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 selected basic model is unavailable for testing, and it may include alternative basic models.

(4) The Secretary may require in the test notice that the manufacturer ship at his expense a reasonable number of units of a basic model specified in the test notice to a testing laboratory designated by the Secretary.

(5) Within five working days of the time the units are selected, the manufacturer must ship the specified units of a basic model to the designated 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 will constitute official test data for that basic model. The Department will use such test data to make a determination of compliance or noncompliance.

(c) *Sampling.* The Secretary will base the determination of whether a manufacturer's basic model complies with the applicable energy performance standard on the testing conducted in accordance with the procedures set forth in this section and § 431.507, and the applicable test procedures specified

in this part. Initially, the Department will test two units, except as follows:

(1) If only one unit of a basic model is available for testing, the Department will test that unit, and will base the compliance determination on the results for that unit in a manner otherwise in accordance with this section. Available units are those which are available for commercial distribution within the United States.

(2) If a basic model is very large or has unusual testing requirements, the Department may decide to base the determination of compliance on the testing of one unit, if the manufacturer so requests and provides sufficient justification for the request.

(d) *Test unit selection.* A DOE inspector will select a batch from all available units, and a test sample (*i.e.*, the units to be tested) from the batch, in accordance with the provisions of this paragraph and the conditions specified in the test notice.

(1) DOE may select the batch by utilizing criteria specified in the test notice, *e.g.*, date of manufacture, component-supplier, location of manufacturing facility, or other criteria which may differentiate one unit from another within a basic model.

(2) DOE will randomly select individual units to be tested, comprising the test sample, from the batch. DOE will achieve random selection by sequentially numbering all of the units in a batch and then using a table of random numbers to select the units to be tested. The manufacturer must keep on hand all units in the batch until such time as the inspector determines the basic model to be in compliance or noncompliance.

(e) *Test unit preparation.* (1) Prior to and during testing, no one may prepare, modify, or adjust in any manner a test unit selected in accordance with paragraph (d) of this section unless the applicable DOE test procedure allows such preparation, modification, or adjustment. DOE will conduct one test for each test unit in accordance with the applicable test procedures.

(2) No one may perform any quality control, testing or assembly procedures on a test unit, or any parts and subassemblies thereof, that is not performed during the production and assembly of all other units included in the basic model.

(3) A test unit is 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, must be reported immediately

to the Department. The Department will authorize testing of an additional unit on a case-by-case basis.

(f) *Testing at manufacturer's option.* If the Department determines a basic model to be in noncompliance with the applicable energy performance standard at the conclusion of its initial enforcement sampling plan testing, the manufacturer may request that the Department conduct additional testing of up to two additional units of the basic model at the manufacturer's expense. Testing under this paragraph must be in accordance with the applicable test procedure specified in this part, the provisions of paragraphs (d) and (e) of this section, and § 431.507(d).

§ 431.507 Enforcement; compliance determination procedure.

The Department will determine compliance for commercial HVAC & WH equipment as follows:

(a) Make the computation in paragraph (b) of this section when the first sample size (n_1) is two units.

(b) Compute the mean (\bar{x}_1) of the measured energy performance of the n_1 units in the first sample as follows:

$$\bar{x}_1 = \frac{1}{n_1} \left(\sum_{i=1}^{n_1} x_i \right)$$

where (x_i) is the measured energy efficiency or energy consumption of unit i .

(c) From the sample mean performance derived pursuant to paragraph (b) of this section, or from the measured performance when compliance is determined from testing one unit pursuant to § 431.506(c), determine one of the following:

(1) For an Energy Efficiency Standard, if the aforementioned sample mean or measured performance is equal to or greater than 95 percent of the applicable energy efficiency standard, the basic model is in compliance and testing is at an end.

(2) For an Energy Consumption Standard, if the aforementioned sample mean or measured performance is equal to or less than 105 percent of the applicable energy consumption standard, the basic model is in compliance and testing is at an end.

(3) Otherwise, the basic model is not in compliance.

(d) *Manufacturer-Option Testing.* If the basic model is in non-compliance pursuant to paragraph (c)(3) of this section, the manufacturer may request additional testing, as follows.

(1) The manufacturer requests the testing of an additional number of units, such that the total size of the combined sample tested does not exceed 4.

(2) Compute the mean energy performance of the new combined sample using the paragraph (b) of this section.

(3) From the mean performance of the new combined sample, determine one of the following:

(i) For an Energy Efficiency Standard, if the new combined sample mean is equal to or greater than 95 percent of the applicable energy efficiency standard, the basic model is in compliance and testing is at an end.

(ii) For an Energy Consumption Standard, if the new combined sample mean is equal to or less than 105 percent of the applicable energy consumption standard, the basic model is in compliance and testing is at an end.

(iii) Otherwise, the basic model is in not in compliance.

§ 431.508 Cessation of distribution of a basic model.

(a) If you are a manufacturer or private labeler, and DOE determines one of your models to be noncompliant, in accordance with § 431.506 and 431.507, or you determine that one of your models is noncompliant, you must:

(1) Immediately cease distribution in commerce of all units of the basic model in question;

(2) Give immediate written notification of the determination of noncompliance, to all persons to whom you have distributed units of the basic model manufactured since the date of the last determination of compliance; and

(3) If a request is made by the Secretary, provide DOE 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 noncompliant.

(b) The manufacturer may modify the noncompliant basic model in such manner as to make it comply with the applicable performance standard. You must treat such a modified basic model as a new basic model and certify it in accordance with the provisions of this subpart; except that in addition to satisfying all requirements of this subpart, you must also maintain records that demonstrate that modifications have been made to all units of the new basic model prior to its distribution in commerce.

(c) If a manufacturer or private labeler has a basic model 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 units of such a basic model.

§ 431.509 Remedies.

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

(a) The Secretary 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 units of such a basic model unless the manufacturer, private labeler or any other person as required, delivers to the Secretary within 15 calendar days a statement, satisfactory to the Secretary, of the steps he will take to insure that the noncompliant basic model will no longer be distributed in commerce. The Secretary 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 noncompliant basic model, the Secretary may seek to restrain such violation in accordance with sections 334 and 345 of the Act.

(c) The Secretary will 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.

§ 431.510 Hearings and appeals.

(a) Under sections 333(d) and 345 of the Act, before issuing an order assessing a civil penalty against any person, the Secretary must provide to such a person a notice of the proposed penalty. Such notice must inform the person that such person can choose (in writing within 30 days after receipt of the 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 a person elects, within 30 calendar days after receipt of a notice under paragraph (a) of this section, to have paragraph (c) apply with respect to the civil penalty under paragraph (a), the Secretary will assess the penalty, by order, after providing an opportunity for an agency hearing under section 554 of title 5, United States Code, and making a determination of violation on the record before an administrative law judge appointed under section 3105 of such title 5. Such assessment order will include the administrative law judge's findings and the basis for such assessment.

(2) Any person against whom the Secretary assesses a penalty under this paragraph may, within 60 calendar days after the date of the order assessing such penalty, initiate 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 will 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 paragraph have been elected, the Secretary will 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 person has not paid the civil penalty within 60 calendar days after the assessment has been made under paragraph (c)(1) of this section, the Secretary will institute an action in the appropriate District Court of the United States for an order affirming the assessment of the civil penalty. The court will have authority to review de novo the law and the facts involved and 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 can only be revoked 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 will 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 will 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 General Counsel of the Department of Energy (or any attorney or attorneys within DOE designated by the Secretary) will represent the Secretary, and will 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 will consult with the Attorney General concerning such litigation and the Attorney General will 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 will 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 section 333(d)(5)(C) and 345 of the Act, section 402(d) of the Department of Energy Organization Act will not apply with respect to the function of the Secretary under this section.

Subpart P—General Provisions for Commercial HVAC & WH Products

§ 431.601 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 § 431.162, and of the provisions specifying the test methods for other commercial HVAC & WH products, 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) If you have submitted a Petition for Waiver as provided in this subpart, you may also file an Application for Interim Waiver of the applicable test procedure requirements.

(b) *Submission, content, and publication.* (1) You must submit your Petition for Waiver in triplicate, to the Assistant Secretary for Energy Efficiency and Renewable Energy, United States Department of Energy. Each Petition for Waiver must:

(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 must 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 the characteristics of the basic

model in a manner representative of its energy consumption; and

(iv) Be signed by you 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 will 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 will solicit comments, data and information with respect to the determination of the petition.

(2) You must submit any Application for Interim Waiver 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 must reference the Petition for Waiver by identifying the particular basic model(s) for which you seek a waiver and temporary exception. Each Application for Interim Waiver must demonstrate likely success of the Petition for Waiver and address what economic hardship and/or competitive disadvantage is likely to result absent a favorable determination on the Application for Interim Waiver. You or an authorized representative must sign the Application for Interim Waiver.

(c) *Notification to other manufacturers.* (1) After filing a Petition for Waiver with DOE, and after DOE has published the Petition for Waiver in the **Federal Register**, you must, within five working days of such publication, notify in writing all known manufacturers of domestically marketed units of the same product type (as defined 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. In complying with the requirements of this paragraph, you must file with DOE a statement certifying the names and addresses of each person to whom you have sent a notice of the Petition for Waiver.

(2) If you apply for Interim Waiver, whether filing jointly with or subsequent to your Petition for Waiver with DOE, you must concurrently notify in writing all known manufacturers of

domestically marketed units of the same product type (as defined 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, you 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. Upon filing an Application for Interim Waiver, you must in complying with the requirements of this paragraph certify to DOE that a copy of these documents has 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. You 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 respect to a Petition for Waiver must also send a copy of such comments to the petitioner. In accordance with paragraph (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, DOE will notify the applicant 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 will be published in the **Federal Register**.

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

(3) *Criteria for granting.* The Assistant Secretary for Energy Efficiency and Renewable Energy will grant an Interim Waiver from test procedure requirements if he or she determines 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 if 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. DOE may extend an interim waiver for up to 180 days or modify its terms based on relevant information contained in the record and any comments received subsequent to issuance of the interim waiver. DOE will publish in the **Federal Register** notice of such extension and/or any modification of the terms or duration 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.* DOE will notify the petitioner 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: criteria, conditions, and publication.* The Assistant Secretary for Energy Efficiency and Renewable Energy will grant a waiver, if he or she determines 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. The Assistant Secretary for Energy Efficiency and Renewable Energy may grant a waiver subject to conditions, which may include adherence to alternate test procedures. DOE 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 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 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.

§ 431.602 Preemption of state regulations for commercial HVAC & WH products.

Beginning on the effective date of such standard, an energy conservation standard set forth in this part for a commercial HVAC & WH product supersedes any State or local regulation concerning the energy efficiency or energy use of that product, except as provided for in section 345(b)(2)(B)-(D) of the Act.

§ 431.603 Maintenance of records.

(a) If you are the manufacturer of any commercial HVAC & WH product, you must establish, maintain and retain records of the following:

(1) The test data for all testing conducted pursuant to 10 CFR part 431, including any testing conducted by a VICP; and

(2) The development, substantiation, application, and subsequent verification of any AEDM.

(b) You must organize such records and index them so that they are 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).

(c) You must retain all such records for a period of two years from the date that production of all units of the commercial equipment for the basic model has ceased. You must retain records in a form allowing ready access to the Department upon request.

§ 431.604 Imported equipment.

(a) Under sections 331 and 345 of the Act, any person importing any commercial HVAC & WH product into the United States must comply with the provisions of the Act and of this part, and is subject to the remedies of this part.

(b) Any commercial HVAC & WH product offered for importation in

violation of the Act and of this part will 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 product 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 product will not violate the Act and this part, or will be exported or abandoned to the United States.

§ 431.605 Exported equipment.

Under sections 330 and 345 of the Act, this part does not apply to any commercial HVAC & WH product if:

(a) Such product is manufactured, sold, or held for sale for export from the United States (or such product was imported for export), unless such product is, in fact, distributed in commerce for use in the United States, and

(b) Such product, when distributed in commerce, or any container in which it is enclosed when so distributed, bears a stamp or label stating that such covered product is intended for export.

§ 431.606 Subpoena.

Under 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. The Secretary must pay witnesses summoned under the provisions of this section the same fees and mileage as 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. Such court can punish the failure to obey such order as a contempt thereof.

§ 431.607 Confidentiality.

Under the provisions of 10 CFR 1004.11, any person submitting information or data which the person believes to be confidential and exempt by law 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 Secretary must make his own determination with regard to any claim that information submitted be exempt from public disclosure.

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