

been used extensively in wolves and dog-wolf crosses with no reported adverse reactions.

Based upon the above, APHIS believes that dogs, wolves, and any dog-wolf cross can be safely and effectively vaccinated with canine vaccines. Therefore, we are proposing to add a definition of *dog* to 9 CFR part 101 to include all members of the species *Canis familiaris*, *Canis lupus*, or any dog-wolf cross. This would allow canine vaccines recommended for use in dogs to be recommended for use in wolves and any dog-wolf cross. Manufacturers who wish to include wolves and dog-wolf crosses on the labels for their canine vaccines could add these animals to the labels. APHIS believes that, even without this change, all canine vaccines labeled for use in dogs would be accepted as being safe and effective in wolves and any dog-wolf cross. If manufacturers wish to include wolves and any dog-wolf cross on their labels, the labels would first need to be approved by and filed with APHIS.

We would not require additional efficacy and safety studies to be performed; however, manufacturers could perform additional efficacy and safety studies, at their discretion, prior to recommending the use of their canine vaccines in wolves and any dog-wolf cross.

#### **Executive Order 12866 and Regulatory Flexibility Act**

This rule has been reviewed under Executive Order 12866. The rule has been determined to be not significant for the purposes of Executive Order 12866 and, therefore, has not been reviewed by the Office of Management and Budget.

This proposed rule would amend the Virus-Serum-Toxin Act regulations by adding a definition of the term *dog* to include all members of the species *Canis familiaris*, *Canis lupus*, or any dog-wolf cross. As a consequence, canine vaccines that are recommended for use in dogs could also be recommended for use in wolves and any dog-wolf cross. Manufacturers could include wolves and any dog-wolf cross on the labels for their canine vaccines. The labels would need to be approved by and filed with APHIS.

This proposed rule would affect all licensed veterinary biologics establishments that produce vaccines for use in dogs. Currently, there are approximately 150 veterinary biologics establishments. According to the standards of the Small Business Administration, most of these establishments would be classified as small entities, and approximately 10 percent of these establishments

currently produce vaccines for use in dogs. Because the efficacy and safety of licensed canine vaccines have already been demonstrated in accordance with the regulations, and because this proposed rule does not require manufacturers to replace labels for their products for use in wolves and any dog-wolf cross, any additional costs manufacturers would incur if this proposed rule is adopted should be minimal.

Currently, manufacturers of veterinary biological products do not recommend canine vaccines for use in wolves and any dog-wolf cross. Under this proposed rule, if manufacturers recommend their canine vaccines for use in wolves and dog-wolf crosses, additional efficacy and safety data would not be required. Therefore, manufacturers would not incur any additional costs as a result of the rule. This proposed rule would not restrict manufacturers from using their discretion to elect to perform additional efficacy and safety studies prior to recommending the use of their canine vaccines in wolves and dog-wolf crosses. However, if a canine vaccine is used on wolves or dog-wolf crosses in accordance with the label recommendations, this proposed rule would not relieve the manufacturer of responsibility for the performance of the product (e.g., adverse reactions).

Under these circumstances, the Administrator of the Animal and Plant Health Inspection Service has determined that this action would not have a significant impact on a substantial number of small entities.

#### **Executive Order 12372**

This program/activity is listed in the Catalog of Federal Domestic Assistance under No. 10.025 and is subject to Executive Order 12372, which requires intergovernmental consultation with State and local officials. (See 7 CFR part 3015, subpart V.)

#### **Executive Order 12988**

This proposed rule has been reviewed under Executive Order 12988, Civil Justice Reform. It is not intended to have retroactive effect. This rule would not preempt any State or local laws, regulations, or policies, unless they present an irreconcilable conflict with this rule. The Act does not provide administrative procedures which must be exhausted prior to a judicial challenge to the provisions of this rule.

#### **Paperwork Reduction Act**

This proposed rule contains no information collection or recordkeeping requirements under the Paperwork

Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

#### **Regulatory Reform**

This action is part of the President's Regulatory Reform Initiative, which, among other things, directs agencies to remove obsolete and unnecessary regulations and to find less burdensome ways to achieve regulatory goals.

#### **List of Subjects in 9 CFR Part 101**

Animal biologics.

Accordingly, we propose to amend 9 CFR part 101 as follows:

#### **PART 101—DEFINITIONS**

1. The authority citation for part 101 would continue to read as follows:

**Authority:** 21 U.S.C. 151–159; 7 CFR 2.22, 2.80, and 371.2(d).

2. In § 101.2, a definition of “dog” would be added in alphabetical order to read as follows:

#### **§ 101.2 Administrative terminology.**

\* \* \* \* \*

*Dog.* All members of the species *Canis familiaris*, *Canis lupus*, or any dog-wolf cross.

\* \* \* \* \*

Done in Washington, DC, this 22nd day of September 1999.

**Bobby R. Acord,**

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

[FR Doc. 99–25177 Filed 9–27–99; 8:45 am]

BILLING CODE 3410–34–U

#### **DEPARTMENT OF ENERGY**

#### **Office of Energy Efficiency and Renewable Energy**

#### **10 CFR Part 430**

[Docket No. EE–RM/TP–99–500]

RIN 1904–AA52

#### **Energy Conservation Program for Consumer Products: Test Procedure for Dishwashers**

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

**ACTION:** Notice of proposed rulemaking and public workshop.

**SUMMARY:** The Department of Energy (We, DOE, or the Department) is proposing to amend its test procedure for dishwashers. The proposal adds test procedures for dishwashers with soil-sensing technology. It also revises some of the inputs for calculating the estimated annual operating cost, adds new specifications to improve testing

repeatability, and changes the definitions of compact and standard models. The proposed amendments of the test procedure do not alter the minimum energy conservation standards currently in effect for dishwashers.

**DATES:** The Department will accept comments, data, and information regarding the proposed rule no later than December 13, 1999. Please submit ten (10) copies. In addition, the Department requests that you provide an electronic copy (3½" diskette) of the comments in WordPerfect™ format.

The Department will hold a public workshop (hearing) on Tuesday, November 2, 1999, in Washington, DC. Please send requests to speak at the workshop so that we receive them by 4:00 p.m., Tuesday, October 19, 1999. The Department must also receive ten (10) copies of statements to be given at the public workshop no later than 4:00 p.m., October 20, 1999, and we request that you provide a computer diskette (WordPerfect™) of each statement at that time.

**ADDRESSES:** Please address requests to make statements at the public workshop and copies of those statements to Ms. Brenda Edwards-Jones, and send written comments regarding the proposed rule to Ms. Barbara Twigg, both 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 documents both on the envelope and on the documents as "Energy Conservation Program for Consumer Products: Test Procedure for Dishwashers, Docket No. EE-RM/TP-99-500." The workshop will begin at 9:00 a.m., on Tuesday, November 2, 1999, in Room 1E-245 at the U.S. Department of Energy, Forrestal Building, 1000 Independence Avenue, SW, Washington, DC. 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 workshop and public comments 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, between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday, except Federal holidays. You may obtain copies of the referenced standard AHAM DW-1 by request from the Association of Home Appliance Manufacturers, 1111 19th Street, NW,

Suite 402, Washington, DC 20036, (202) 872-5955.

The latest information regarding the public workshop is available on the Office of Codes and Standards web site at the following address: [http://www.eren.doe.gov/buildings/codes\\_standards/index.htm](http://www.eren.doe.gov/buildings/codes_standards/index.htm)

**FOR FURTHER INFORMATION CONTACT:**

Barbara Twigg, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, EE-41, 1000 Independence Avenue, SW, Washington, DC 20585-0121, (202) 586-8714, email: [barbara.twigg@ee.doe.gov](mailto:barbara.twigg@ee.doe.gov); or Eugene Margolis, Esq., U.S. Department of Energy, Office of General Counsel, GC-72, 1000 Independence Avenue, SW, Washington, DC 20585, (202) 586-9507, email: [eugene.margolis@hq.doe.gov](mailto:eugene.margolis@hq.doe.gov)

**SUPPLEMENTARY INFORMATION:**

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**I. Introduction**

**A. Authority**

Part B of Title III of the Energy Policy and Conservation Act, as amended (EPCA or Act), establishes the Energy Conservation Program for Consumer Products Other Than Automobiles (Program). The products currently subject to this Program ("covered products") include residential

dishwashers, the subject of today's notice.

Under the Act, the Program consists of three parts: testing, labeling, and the Federal energy conservation standards. The Department, in consultation with the National Institute of Standards and Technology (NIST), must amend or establish test procedures as appropriate for each of the covered products. Section 323 of EPCA, 42 U.S.C. 6293. The purpose of the test procedures is to measure energy efficiency, energy use, or estimated annual operating cost of a covered product during a representative average use cycle or period of use. The test procedure must not be unduly burdensome to conduct. Section 323(b)(3) of EPCA, 42 U.S.C. 6293(b)(3).

If a test procedure is amended, DOE is required to determine to what extent, if any, the new test procedure would alter the measured energy efficiency or measured energy use of any covered product as determined under the existing test procedure. If DOE determines that an amended test procedure would alter the measured efficiency or measured energy use of a covered product, DOE is required to amend the applicable energy conservation standard accordingly. In determining the amended energy conservation standard, DOE is required to measure the energy efficiency or energy use of a representative sample of covered products that minimally comply with the existing standard. The average efficiency of these representative samples, tested using the amended test procedure, constitutes the amended standard. Section 323(e)(1) of EPCA, 42 U.S.C. 6293(e)(1).

Beginning 180 days after a test procedure for a product is prescribed, no manufacturer, distributor, retailer, or private labeler may make representations with respect to the energy use, efficiency, or cost of energy consumed by such products, except as reflected in tests conducted according to the DOE procedure. Section 323(c)(2) of EPCA, 42 U.S.C. 6293(c)(2).

**B. Background**

The Department published the original dishwasher test procedure on August 3, 1977 (42 FR 39964). On March 3, 1983 (48 FR 9202), we published an amended version which revised the representative average-use cycles to reflect consumer use and to address dishwashers that use 120°F inlet water. We amended the test procedure again on November 27, 1984 (49 FR 46533), in order to redefine a water heating dishwasher by deleting the requirement for internal heating in the rinse phase of a normal cycle. On

December 15, 1987 (52 FR 47551), DOE amended the dishwasher test procedure to address models that use 50°F inlet water.

In February 1995, NIST conducted a review of domestic and international dishwasher test procedures. NIST submitted two reports, "Review of the DOE Test Procedure for Residential Dishwashers" and "Review of AHAM (Association of Home Appliance Manufacturers) and International Test Procedures for Residential Dishwashers," to DOE on July 17, 1995. These reports identified many of the problems that are addressed in this notice. On December 13, 1995, we met with NIST, AHAM, and representatives from six dishwasher manufacturers to discuss the two NIST reports and proposed changes to the test procedure.

Following this meeting, NIST conducted a series of tests on two residential dishwashers, one conventional and one soil-sensing, using the current DOE, International Electrotechnical Commission (IEC), and AHAM dishwasher test procedures. Review of the DOE test procedure made clear the need for revision, while the studies using the two latter test procedures highlighted the difficulty in conducting repeatable performance-based testing with soil loads, regardless of dishwasher type.

In May 1997, NIST published a report entitled "Energy and Water Consumption Testing of a Conventional Dishwasher and an Adaptive Control Dishwasher, IATC-1997." Subsequently, we again met with NIST, manufacturers, and environmental groups to discuss options for improving the effectiveness of the current test procedure. AHAM then sent a letter to the Department which compiled many of the discussed changes and suggested a new approach to testing soil-sensing dishwashers.

In preparing this Notice of Proposed Rulemaking, we have taken into consideration different views on how to improve the current test procedure and incorporated suggestions from industry and other stakeholders. The amendments proposed in this notice will provide a more accurate procedure for determining the energy factor for dishwashers employing soil-sensing technology than the existing one, which does not adequately measure the energy use of these models. We also propose to update the average use cycles to reflect current usage patterns, and to revise the measurements and calculations required to determine the values used to estimate the annual operating cost for all dishwashers. The Department welcomes test data to determine the effects of

these modifications on any existing soil-sensing dishwasher.

### C. Summary of the Proposed Test Procedure Revisions

The Department proposes the following changes to the dishwasher test procedure:

1. Update the test procedure to reflect changes in dishwasher design and consumer practices.

- Add test procedures for soil-sensing dishwashers.

- Add new definitions for sensor normal cycle and sensor truncated normal cycle.

- Add a new formula for calculating the machine and water energy consumption per cycle for soil-sensing models.

- Update the representative average number of use cycles per year.

- Combine explanation of the Estimated Annual Operating Cost (EAO) calculation for dishwashers both with and without normal and truncated normal cycles.

- Base the definitions of compact and standard dishwashers on place-setting capacity.

2. Improve testing repeatability.

- Revise definition 1.10, "Truncated Normal Cycle" (previously 1.5).

- Tighten the tolerance for ambient temperature.

- Add more detail to test chamber installation requirements.

- Add an instruction for manufacturers to run a conditioning cycle prior to the test.

- Introduce a new section, Section 3, "Instrumentation," to consolidate all measurement specifications and to base tolerances on nominal values.

- Improve the overall format while introducing the new methodology for soil-sensing dishwashers.

3. Correct the last published rule.

- Correct typographical errors in definition 1.11, "Water Heating Dishwasher" (previously 1.6), and in section 2.2.2, "electrical."

- Remove obsolete text specific to dishwashers manufactured before May 14, 1994.

## II. Discussion

### A. General Discussion

While this proposed rulemaking retains many of the features of the current test procedure for measuring the energy use of dishwashers, it also includes important changes. We are retaining the current method for testing conventional, or non-soil-sensing dishwashers. However, we propose to amend the established test procedure by adding a new test method for measuring

the energy consumption of soil-sensing models. The new procedure for the soil-sensing models will require manufacturers to measure the energy consumption of both short and long cycles, and weight the average results by the percentage of users who pre-rinse their dishes and those who do not pre-treat. This variable of consumer behavior is an important factor in determining whether a dishwasher sensor will select a short wash cycle or a long wash cycle. The sensor will select a short cycle with reduced energy consumption if pre-rinsed dishes add little food matter into the water. The sensor will select a longer cycle, increasing energy use, if dirty dishes raise the level of food matter in the water. In order to determine a fair representation of how these soil-sensing machines perform, the Department is especially interested in receiving comments on user behavior with regard to pre-treatment of dishes, or more directly, information on the average soil load that dishwashers today encounter. Such data on consumer pre-rinsing behavior will help us to assign more accurate percentages to how often a dishwasher's load is heavily soiled, versus how often the load of dishes is almost soil-free.

### B. Changes in Dishwasher Design and Consumer Practices

#### 1. Soil-Sensing Technology

The introduction of dishwasher models using soil-sensing technology prompted the need to revise the current test procedure, last revised in 1987, because the current test method does not accurately measure the energy consumption of models with variable cycles. The soil-sensing (or adaptive control) dishwashers adjust the length of the washing cycle according to the amount of soil matter in the water. A well-rinsed dish load will trigger a short wash cycle, while more heavily soiled dishes will trigger a longer cycle. The soil-sensing dishwashers measure the level of turbidity in the water or the pressure drop across filter screens to determine the soil level and select the appropriate cycle. However, when soil-sensing dishwashers are tested with the current test procedure, which uses only clean dishes, the absence of soils invariably triggers a shortened cycle. Thus, the energy factors obtained are very high and do not reflect a dishwasher's performance when a soiled load is present. At least one manufacturer, Maytag, has reported to DOE lower energy factors than those obtained using the current test procedure because it recognizes that the

results are not representative of the energy and water consumption that consumers are likely to experience under normal use. Some loads could be highly soiled, triggering a longer cycle and resulting in a lower energy factor for the machine. Thus, the test procedure for soil-sensing machines should provide reliable data reflecting performance under both types of loads, well-rinsed and soiled, without greatly increasing the test burden or cost to manufacturers.

As a first step in establishing testing procedures for the new models, the Department proposes to add definitions for conventional and soil-sensing dishwashers, and to prescribe a distinct test method for each. The test for conventional dishwashers remains essentially the same. The new test for soil-sensing models is based on a method developed by AHAM. Following a series of discussions with manufacturers, AHAM suggested a method to collect representative data by artificially forcing soil-sensing dishwashers into a maximum sensor normal cycle. DOE is proposing to adapt this method with modifications proposed by NIST. Although the concept is unchanged, NIST determined that language was needed to address the calculation of machine energy and water energy, adding weighting factors to each.

Under the new test procedure, manufacturers would test a soil-sensing dishwasher in accordance with the current DOE test procedure in the normal cycle and record the energy and water consumption values for the "minimum sensor normal" as  $M_{\min}$  and  $V_{\min}$ , respectively. They would then adjust the dishwasher cycle to reflect maximum soil loading and repeat the test, recording the energy and water consumption values for the "maximum sensor normal" as  $M_{\max}$  and  $V_{\max}$ , respectively. Each manufacturer would record, in the certification report, keystroke instructions on how to force a dishwasher into a maximum sensor normal response.

The next step would be to weight energy and water consumption values according to the fraction of people who do and do not pre-treat their dishes. The electrical energy consumption per cycle for the machine will be expressed in kilowatt-hours per cycle and defined as:  $M = [M_{\min} \cdot (P) + M_{\max} \cdot (1-P)]$ , where  $P$  equals the fraction of people who pre-treat dishes and  $(1-P)$  equals the fraction of people who do not pre-treat dishes. Similarly, the water consumption per cycle for the machine will be expressed in gallons per cycle and defined as:  $V = [V_{\min} \cdot (P) + V_{\max} \cdot (1-$

$P)]$ , using the same weighting factors ( $P$  and  $1-P$ ).

The manufacturers would then use the water consumption to calculate the energy required to heat the supply water. Next, they would combine that energy with the machine energy to yield the total per cycle energy consumption for the test unit. Additionally, if the test unit has a truncated cycle option (a cycle preset to eliminate the power-dry feature), the test would be repeated and the data collected for the "minimum truncated sensor normal" and the "maximum truncated sensor normal" cycles. These values would be used to calculate the EAOE under the current method.

The Department has reviewed these suggestions and proposes to adopt this method for testing soil-sensing dishwashers with some modification. We believe that although the methodology is acceptable, the matter of how to force the dishwasher into a maximum response mode must be clarified. The Department therefore proposes to include a clause stating that if a manufacturer does not have a way to artificially force a maximum sensor normal cycle, the manufacturer must introduce a soil load according to the AHAM DW-1 performance test to trigger a maximum response.

A second issue is the determination of what percentages should be used in prorating the  $M_{\min}$ ,  $M_{\max}$ ,  $V_{\min}$ , and  $V_{\max}$  values. AHAM proposed using data obtained from the Soap and Detergent Association (SDA) based on surveys of the number of persons who pre-treat their soiled dishes versus those who merely scrape the soiled dishes or load them directly into the dishwasher. The SDA report, based on 1995 data, states that 79 percent of the people surveyed pre-treat their dishes (using water to rinse, scrub, or soak the dishes) and 21 percent of those surveyed do nothing or merely scrape their plates. However, the SDA report also cautions that because these results are based on consumer perception and interpretation, not on objective measures of loads washed, their survey has "the inherent uncertainties of consumer questionnaires." The resulting data could give an "indication of the use and patterns of use," but "should probably not be used in an energy standards setting framework." (See SDA letter to AHAM, July 13, 1998.)

The Oregon Office of Energy submitted a comment expressing concern about the lack of hard data regarding consumer pre-treatment of dishes and the acceptance of the 79-21 weights suggested by the SDA survey. The comment questioned the "rather

loose definition of 'pre-treatment of dishes with water,'" and stated that "without more exacting data as to what 'pre-treatment' means, and what effect partially rinsed dishes (or combined loads of 'pre-treated' and not 'pre-treated') might have on existing sensor-equipped models, [they] will argue against any weighting proposal other than 50-50." (See Stephens letter, p. 2, December 16, 1998.)

The Department agrees that given the disclaimer within the SDA report and other expressed concerns, the 1995 SDA data is not sufficient for determining the percentages of pre-treatment. For this reason, we collected additional data from a 1989 Proctor and Gamble survey which found that approximately 73 percent of the surveyed population pre-treated their dishes, while 27 percent did not pre-treat their dishes. This information supports the AHAM statement that the number of persons who pre-treat their dishes has increased over the past 10 years. Another dishwasher user survey conducted in 1999 by Dethman and Associates for the Northwest Energy Efficiency Alliance and the Consortium for Energy Efficiency found that 63 percent of respondents rated their dishes as "somewhat clean," with small particles of food left, or "very clean," with all or almost all of the food gone. However, when Dethman and Associates calculated a cleanliness score based on a series of questions, the results showed that 83 percent of respondents rated their loads as "somewhat clean" or "very clean." This discrepancy highlights the subjective nature of these surveys and the variation in results depending on the way questions were presented. We are therefore using these data as a qualitative indication and not as a quantitative measure of consumer practices.

Other reasons for regarding the data as an imperfect approximation involve the assumptions behind the use of the percentages in the prorated calculation procedure. Prorating assumes a linear relationship between soil loading and energy consumption, which may or may not apply to a given dishwasher design. Also, as illustrated by the Dethman and Associates Dishwasher Survey Report, dishes loaded into dishwashers do not simply fall into two distinct categories, clean and dirty, but vary along a continuum from clean, at one extreme, to heavily soiled on the other. Because of this variation, some loads that are not pre-treated may still not require, or trigger, the maximum cycle, while on the other hand, a pre-treated load may contain some heavily soiled dishes that require the washer to go beyond the

minimum cycle to clean them adequately. A more precise calculation would require detailed soil loading statistics reflecting consumer behavior, as well as specific dishwasher response patterns to the loadings over a corresponding range of values.

Lacking more precise data at this time, the Department is proposing to use the following compromise figures as a reasonable surrogate for average soil loading: 70 percent to represent the percentage of the population that pre-treats their dishes and 30 percent to represent the percentage that does not pre-treat their dishes. Since the determination of these percentages is critical to the test procedure formula for the soil-sensing dishwashers, we are especially interested in receiving comments on the percentages proposed. If stakeholders propose alternative percentages for consumer pre-treatment behavior, it is critical that they provide data or other information that justifies those percentages.

2. Representative Average Dishwasher Use

In 1983, DOE amended the dishwasher test procedure to reduce the representative average use from 416 cycles per year to 322 cycles per year based on a Proctor and Gamble survey of consumer use conducted prior to 1982. For this rulemaking, the Department solicited new survey data from the SDA for more recent years. In response, the SDA provided survey results for selected years between 1985 and 1995 which indicate that the number of cycles consumers use on a yearly basis has decreased. Therefore, the Department is proposing to revise the representative average annual use to 264 cycles per year<sup>1</sup>. This change effectively lowers the annual energy use and therefore the estimated EAOC, defined as the product of the per cycle energy consumption, the representative average-use cycles, and the cost of energy.

3. Standby Electricity Consumption

The Department received a comment from the Oregon Office of Energy calling our attention to the issue of standby electricity consumption in dishwasher models using transformers and microprocessors to power timers, display lights, and other advanced

cycle, control, and soil-sensing features. The comment urged that this "invisible" power consumption be included in the overall energy consumption for dishwashers to give a more complete and accurate calculation of energy use than is currently available (See Stephens letter, p. 3, *supra*). Although we recognize that it is important to evaluate standby power consumption in both dishwashers and other appliances, the Department plans to develop a consistent policy for all covered appliances on a program-wide basis. Until that time, we will not address standby power consumption in individual test procedure rulemakings.

4. New Definitions for "Compact" and "Standard" Dishwashers

DOE proposes to change the definitions of "compact" and "standard" dishwashers, found in section 430.32(f). The current test procedure uses exterior width to define the following product classes. Compact dishwashers are those models less than 22 inches in exterior width. Standard dishwashers are equal to or greater than 22 inches in exterior width.

Upon reinvestigation of this definition, however, we believe that using width to determine the product class is not correct. The proposed definition would use place setting capacity to distinguish compact from standard models, the determinant used by industry and by the Federal Trade Commission (FTC) for labeling. Thus, the Department proposes to define a compact dishwasher as a unit with a capacity of fewer than eight place settings, and a standard dishwasher as a unit with a capacity of eight or more place settings. This change should provide a more accurate, useful, and consistent classification for consumers. We are aware, for example, of a few models for which the current DOE classification system seems inconsistent and misleading. Whirlpool, for example, manufactures an under-counter dishwasher under the Roper Brand, model RUD0800EB, which has an eight place setting capacity. Because it is only 18 inches wide, however, it is classified as a compact dishwasher. Under the proposed definition, the Whirlpool 18 inch model, along with all models having an 8 place setting plus six serving piece capacity, would be classified as standard dishwashers.

Another dishwasher that presents a potential for mislabeling under the current width-based definition is the "DishDrawer" model manufactured by Fisher & Paykel which can be purchased with one drawer (model DD601) or two drawers (model DD602). This two

drawer system operates as two stacked dishwashers sharing the same plumbing and washing system that can operate together or independently. However, if a customer only purchases the single drawer option, with its loading capacity of approximately 6 place settings, the single drawer model would be incorrectly classified as a standard-sized dishwasher because the drawer is greater than 22 inches wide. Disregarding the DOE definition, Fisher and Paykel has already marketed its single drawer model as a compact dishwasher, despite its standard-sized width.

The Department believes that a capacity-based definition of dishwasher class will be more useful to consumers when making purchasing decisions, since it appears that capacity, not width, is the criterion which most often determines a consumer's selection of a standard or compact model. This change will also ensure that all dishwashers are held to the appropriate minimum energy standard for their intended class, and that Federal definitions for making dishwasher class distinctions are rational. We therefore propose that the Department's definition of standard and compact dishwashers be based on capacity, consistent with the following FTC definitions (16 CFR Part 305 Appendix C):

"Compact" includes countertop dishwasher models with a capacity of fewer than eight (8) place settings.

"Standard" includes portable or built-in dishwasher models with a capacity of eight (8) or more place settings.

"Place settings shall be in accordance with Appendix C to Subpart B of 10 CFR part 430, [2.6.2]."

The Department proposes to modify Section 430.32(f) to read as follows:

Product class	Energy factor (cycles/KWh)
(1) Compact Dishwasher (capacity less than eight place settings plus six serving pieces as specified in section 6 of AHAM Standard DW-1) .....	0.62
(2) Standard Dishwasher (capacity equal to or greater than eight place settings plus six serving pieces as specified in section 6 of AHAM Standard DW-1) .....	0.46

This definition would also be consistent with the current test procedure's requirement that an eight place setting load plus six serving pieces be used in dishwashers with water heating capabilities for tests of the

<sup>1</sup> 264 represents the average number of cycles per year for the odd years, 85/86, 87/88, 89/90, 91/92, 93/94, 95/96, based on survey data obtained by a member company of the SDA and provided to the Department by AHAM via letter dated July 22, 1998. Note: data for survey years 90/91 and 92/93 were disregarded as part of the incomplete set of data points for the even survey years.

normal cycle at temperatures below 140°F. Thus, if this change is adopted, the manufacturers of eight place setting capacity dishwashers would still be held to the same test required of all standard dishwashers.

Because the new definitions will change the size classifications for some dishwashers, models manufactured after the effective date of this rulemaking must meet the energy standard designated for their new size category. For example, under the proposed definition, a few models, such as Whirlpool model RUD0800EB, would be reclassified from compact to standard dishwashers and would thereby have a lower energy factor requirement (decreased from 0.62 cycles/kWh to 0.46 cycles/kWh). Conversely, those dishwashers not capable of handling the eight place setting plus six serving piece load, such as the Fisher & Paykel model DD601, would be required to meet higher energy factor (increased from 0.46 cycles/kWh to 0.62 cycles/kWh), which the Fisher & Paykel model already does (the energy factor for the one drawer model is 1.16 cycles/kWh). We would, however, like to know about any other dishwashers that would be affected by this change in definition.

### C. Improving Testing Repeatability

The Department proposes several changes to clarify the existing test procedure and improve its repeatability when multiple tests are conducted.

- In the definitions of 10 CFR part 430, Subpart B, Appendix C, the Department proposes to modify the definition of "Truncated Normal Cycle."

Under the current definition, section 1.5, "Truncated Normal Cycle" means the normal cycle interrupted to eliminate the power-dry feature after the termination of the last rinse operation." Since the test procedure calls for the test cycle to be selected prior to its initiation and for the cycle to run to completion, we believe that it is more accurate to substitute the word "preset" for "interrupted." This change supports the statement in the test procedure that the cycle type be set and allowed to proceed to completion. The new definition would read: "'Truncated Normal Cycle' means the normal cycle preset to eliminate the power-dry feature after the termination of the last rinse operation."

- The Department proposes that the tolerance for the ambient temperature in testing conditions be tightened from the current range of between 70 °F and 85 °F to 75 ±5 °F.

According to NIST, a 15° temperature variation produced significant differences in the average machine energy consumption for the same

dishwasher running the normal cycle with an 8 piece load. NIST tests found that the average total energy consumption of dishwashers tested at 85 °F ambient would be 17.6 percent lower than dishwashers tested at 70 °F ambient. We feel this is a significant percentage of variation which should be reduced by narrowing the allowable temperature range for testing. This change would also be consistent with AHAM performance tests, which must be conducted in the temperature range of 75 ±5 °F, and would bring the temperature range closer to the one used by the IEC standard for testing dishwashers (59 °F to 77 °F, 20±5 °C).

The new language would be:

"2.5 *Ambient and machine temperature.* Using a temperature measuring device as specified in 3.1 of this Appendix, maintain the room ambient air temperature at 75±5°F, and ensure that the dishwasher and the test load are at room ambient temperature at the start of each test cycle."

- The Department proposes to incorporate more detailed requirements for test chamber installation.

Currently, there are no installation instructions in the event that the manufacturer does not specify them. The test chamber provides an insulating effect which simulates under counter conditions and reduces heat loss to the environment, thereby increasing the overall energy performance. In an effort to improve the consistency of test results among laboratories, DOE proposes to add more detailed instructions to the dishwasher test procedure, using the wording proposed by AHAM. We are basing these proposed installation instructions on Underwriters Laboratories publication UL 749, "Standard for Safety: Household Dishwashers," to support uniformity among testing laboratories without adding significantly to the test burden. The proposed revised installation instructions are as follows:

"2. Testing conditions: 2.1 *Installation Requirements.* Install the dishwasher according to the manufacturer's instructions. A standard or compact under-counter or under-sink dishwasher must be tested in a rectangular enclosure constructed of nominal 0.374 inch (9.5 mm) plywood painted black. The enclosure must consist of a top, a bottom, a back, and two sides. If the dishwasher includes a countertop as part of the appliance, omit the top of the enclosure. Bring the enclosure into the closest contact with the appliance that the configuration of the dishwasher will allow."

- The Department proposes that manufacturers include a preconditioning cycle as part of the test procedure prior to running the test cycle.

We are aware that it is a common industry practice to run a preconditioning cycle for dishwashers before conducting a test. This ensures that the water lines and sump area of the pump are primed, which better approximates normal household conditions. Without this preconditioning cycle, the dishwasher consumes more water in the first fill than under normal operation. As a result, we believe this step should be included as part of the test procedure in order to improve consistency among laboratories.

- DOE proposes to introduce a new section, Section 3 "Instrumentation" to consolidate all measurement specifications and to base tolerances on nominal values.

Within this section, the Department proposes to add specifications for temperature measurement devices which were not stated previously. This will limit the variation in testing equipment accuracy. This separate section should also make it easier to identify the instrumentation requirements and will eliminate the need to restate measurement specifications in each section. The Department also proposes to change the way tolerances are specified to reduce the variation in testing conditions. By basing tolerances on nominal values, manufacturers will have a target specification and tolerance rather than a range of acceptable values.

- We propose to combine the sections explaining the Estimated Annual Operating Cost calculation (EAOOC) for dishwashers with and without truncated normal cycles.

We are consolidating these two sections to simplify the test procedure since the calculation for these two cases is identical.

### D. Corrections to Last Published Rule

- The Department will correct two typographical errors found in the last published test procedure.

In current Section 1.11 "Water Heating Dishwasher," "heating" was misspelled, and in current Section 2.2.1 "Dishwashers that operate with an electrical supply of 240 volts," "electrical" was misspelled. Both are corrected in the amended test procedure.

- The Department proposes to remove language specific to dishwashers manufactured before 1994.

In the last published dishwasher test procedure, we set a date, May 14, 1994, prior to which all dishwashers were required to be equipped with an option to dry without heat. However, for dishwashers manufactured on or after

May 14, 1994, the sole requirement is that all dishwasher models meet the minimum energy standard. Therefore, since language specific to dishwashers manufactured before 1994 is no longer meaningful, the Department proposes to remove it. The resulting Section 430.32 would read:

(f) Dishwashers. The energy factor of dishwashers manufactured on or after May 14, 1994, must not be less than:

Product class	Energy factor (cycles/KWh)
(1) Compact Dishwasher (capacity less than eight place settings plus six serving pieces as specified in section 6 of AHAM Standard DW-1) .....	0.62
(2) Standard Dishwasher (capacity equal to or greater than eight place settings plus six serving pieces as specified in section 6 of AHAM Standard DW-1)	0.46

• The Department proposes that "AHAM" be defined within Appendix C. The current test procedure references the AHAM DW-1 publication for the specifications of the test load without stating what "AHAM" stands for. Therefore, to clarify the source of the publication, we propose to introduce the following definition: "'AHAM' means the Association of Home Appliance Manufacturers."

*E. Re-Testing Soil-Sensing Dishwasher Models With New Test Procedure*

Based on our discussions with industry representatives, we understand that soil-sensing dishwashers represent a small portion of the overall dishwasher market. Because most soil-sensing models appear to be fully compliant with the current standard, rather than marginally compliant, we do not expect a significant number of machines to fail to meet the current standard using the new test procedure. Thus, the new test procedure will not require the Department to conduct a series of tests to determine whether to alter the minimum energy conservation standards currently in effect for dishwashers. However, once the new test procedure takes effect (30 days) after the publication of the final rulemaking, all manufacturers must re-test and rate soil-sensor models such that all representations are based on the new test procedure, effective 180 days after it becomes applicable. They must report the new energy use information to the Department, and all models previously in compliance with the standard which no longer meet the

standard will be grandfathered. If, however, the Department changes the minimum energy standard in the future, all models must comply with that standard, using the test procedure in effect at that time.

**III. Procedural Requirements**

*A. Review Under the National Environmental Policy Act of 1969*

In this proposed rule, the Department proposes amendments to test procedures that may be used to implement future energy conservation standards for dishwashers. The Department has determined that this proposed rule falls into a class of actions that are categorically excluded from review under the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. 4321 *et seq.* The proposed rule is covered by Categorical Exclusion A5, for rulemakings that interpret or amend an existing rule without changing the environmental effect, as set forth in the Department's NEPA regulations in Appendix A to Subpart D, 10 CFR part 1021. This proposed rule will not affect the quality or distribution of energy usage and, therefore, will not result in any environmental impacts. Accordingly, neither an environmental impact statement nor an environmental assessment is required.

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

This regulatory proposal is not a "significant regulatory action" under Executive Order 12866, "Regulatory Planning and Review," 58 FR 51735 (October 4, 1993). Accordingly, the proposed action is not subject to review under the Executive Order by the Office of Information and Regulatory Affairs.

*C. Review Under the Regulatory Flexibility Act of 1980*

The Regulatory Flexibility Act of 1980, 5 U.S.C. 601-612, requires that an agency prepare an initial regulatory flexibility analysis for any rule, for which a general notice of proposed rulemaking is required, that would have a significant economic effect on small entities unless the agency certifies that the proposed rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. 5 U.S.C. 605.

This proposed rule prescribes test procedures that will be used to test compliance with energy conservation standards. The proposed rule affects dishwasher test procedures and would not have a significant economic impact, but rather would provide common

testing methods. Therefore DOE believes that the proposed rule would not have a "significant economic impact on a substantial number of small entities," and the preparation of a regulatory flexibility analysis is not warranted.

*D. "Takings" Assessment Review*

DOE has determined pursuant to Executive Order 12630, "Governmental Actions and Interference with Constitutionally Protected Property Rights," 53 FR 8859 (March 18, 1988), that this regulatory proposal, if adopted, would not result in any takings which might require compensation under the Fifth Amendment to the United States Constitution.

*E. Federalism Review*

Executive Order 12612, "Federalism," 52 FR 41685 (October 30, 1987), requires that regulations, rules, legislation, and any other policy actions be reviewed for any substantial direct effects on States, on the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among various levels of Government. If there are substantial direct effects, then this Executive Order requires preparation of a Federalism assessment to be used in all decisions involved in promulgating and implementing a policy action.

The proposed rule published today would not regulate the States. Accordingly, DOE has determined that preparation of a Federalism assessment is unnecessary.

*F. Review Under the Paperwork Reduction Act*

No new information or recordkeeping requirements are imposed by this proposed rulemaking. Accordingly, no OMB clearance is required under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*

*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 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) provides a clear legal standard for affected conduct while promoting simplification and reducing burdens; (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 of the Executive Order requires Executive agencies to review regulations in light of applicable standards in sections 3(a) and 3(b) to determine whether they are met or it is unreasonable to meet one or more of them.

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 the 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 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.

#### *I. Review Under the Plain Language Directives*

Section 1(b)(12) of Executive Order 12866 requires that each agency shall draft its regulations to be simple and easy to understand, with the goal of minimizing the potential for uncertainty and litigation arising from such uncertainty. Similarly, the Presidential memorandum of June 1, 1998 (63 FR 31883) directs the heads of executive departments and agencies to use, by January 1, 1999, plain language in all proposed and final rulemaking documents published in the **Federal Register**, unless the rule was proposed before that date.

Today's proposed rule uses the following general techniques to abide by Section 1(b)(12) of Executive Order 12866 and the Presidential memorandum of June 1, 1998 (63 FR 31883):

- Organization of the material to serve the needs of the readers (stakeholders).
- Use of common, everyday words in short sentences.
- Shorter sentences and sections.

We invite your comments on how to make this proposed rule easier to understand.

#### *J. 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 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 proposed issues set forth in today's proposed rule to Ms. Barbara Twigg, at the address indicated at the beginning of this notice. We will consider all submittals received by the date specified at the beginning of this notice in developing the final rule.

According to 10 CFR 1004.11, any person submitting information that 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 Workshop*

##### **1. Procedures for Submitting Requests To Speak**

You will find the time and place of the public workshop listed at the beginning of this notice of proposed rulemaking. 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 issues, to make a request for an opportunity to make an oral presentation. If you would like to attend the public workshop, please notify Ms. Brenda Edwards-Jones at (202) 586-2945. You may hand deliver requests to speak to the address indicated at the beginning of this notice between the hours of 8:00 a.m. and 4:00 p.m., Monday through Friday, except Federal holidays, or send them by mail.

The person making the request should state why he or she, either individually or as a representative of a group or class of persons, is an appropriate spokesperson, briefly describe the nature of the interest in the rulemaking, and provide a telephone number for contact.

The Department requests each person selected to be heard to submit an

advance copy of his or her statement at least two weeks prior to the date of this workshop as indicated at the beginning of this notice. The Department, at its discretion, may permit any person wishing to speak who cannot meet this requirement to participate 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 Workshop

The workshop (hearing) will be conducted in an informal, conference style. The Department may use a professional facilitator to facilitate discussion, and a court reporter will be present to record the transcript of the meeting. We will present summaries of comments received before the workshop, allow time for presentations by workshop participants, and encourage all interested parties to share their views on issues affecting this rulemaking. Following the workshop, we will provide an additional comment period, during which interested parties will have an opportunity to comment on the proceedings at the workshop, as well as on any aspect of the rulemaking proceeding.

The Department will arrange for a transcript of the workshop and will make the entire record of this rulemaking, including the transcript, 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 Requested for Comment

The Department of Energy is interested in receiving comments and/or data concerning the feasibility, workability, and appropriateness of the test procedures proposed in this proposed rulemaking. Also, DOE welcomes discussion on improvements or alternatives to these approaches. We are especially interested in any data regarding:

- (1) The frequency with which dishwashers' loads are pre-treated;
- (2) The amount of water energy consumed in pretreatment (kW);
- (3) The degree of cleanliness of pre-treated dishes;
- (4) The typical soil levels for the normal cycle;
- (5) The frequency that max., min., and other normal cycles are run and the corresponding energy consumption for those respective cycles;
- (6) Any dishwashers adversely affected by changing the definitions of compact and standard models; and

(7) any soil-sensing dishwashers adversely affected by the new test procedure.

These data will help us to select the percentages reflecting how often dishwashers encounter well-rinsed or soiled loads.

### List of Subjects in 10 CFR Part 430

Administrative practice and procedure, Energy conservation, Household appliances.

Issued in Washington, DC, on September 20, 1999.

**Dan W. Reicher,**

*Assistant Secretary, Energy Efficiency and Renewable Energy.*

For the reasons set forth in the preamble, the Department proposes to amend Part 430 of Chapter II of Title 10, Code of Federal Regulations, to read as follows.

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

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

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

2. Section 430.23 of Subpart B is amended by revising the section heading, and paragraph (c) to read as follows:

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

\* \* \* \* \*

(c) Dishwashers. (1) The Estimated Annual Operating Cost (EAOC) for dishwashers is defined as follows:

(i) When electrically-heated water (120 °F or 140 °F) is used or when cold water (50 °F) is used—

(A) For dishwashers having a truncated normal cycle as defined in 1.10 of appendix C to this subpart,  $EAOC_t = N \times D_e \times [0.5 \times (M_n + M_t)]$ , and

(B) For dishwashers not having a truncated normal cycle,  $EAOC_n = N \times D_e \times M_n$ ,

where

$N$  = the representative average use of 264 cycles per year,

$D_e$  = the representative average unit cost of electrical energy in dollars per kilowatt-hour as provided by the Secretary.

$M_n$  = the total machine electrical energy consumption per-cycle for the normal cycle as defined in 1.5 of Appendix C to this subpart, in kilowatt-hours and determined according to 5.1 of Appendix C to this subpart.

$M_t$  = the total machine electrical energy consumption per-cycle for the

truncated normal cycle as defined in 1.10 of Appendix C to this subpart, in kilowatt-hours and determined according to 5.1 of Appendix C to this subpart.

(C) You must round off the resulting estimated annual operating cost to the nearest dollar per year.

(ii) When gas-heated or oil-heated water is used:

(A) For dishwashers having a truncated normal cycle as defined in 1.10 of Appendix C to this subpart,  $EAOC_t = N \times [(D_e \times 0.5(M_n + M_t)) + (D_w \times 0.5(W_n + W_t))]$ , and

(B) For dishwashers not having a truncated normal cycle,  $EAOC_n = N \times [(D_e \times M_n) + (D_w \times W_n)]$ ,

where

$N$ ,  $D_e$ ,  $M_n$ , and  $M_t$  are defined in (c)(1)(i) of this section.

$D_w$  = the representative average unit cost in dollars per Btu for gas or oil, as appropriate, as provided by the Secretary.

$W_n$  = the total water energy consumption per cycle for the normal cycle as defined in 1.5 of appendix C to this subpart, in Btus and determined according to 5.3 of appendix C to this subpart.

$W_t$  = the total water energy consumption per cycle for the truncated normal cycle as defined in 1.10 of appendix C to this subpart, in Btus and determined according to 5.3 of appendix C to this subpart.

(C) You must round off the resulting estimated annual operating cost to the nearest dollar per year.

(2) The energy factor for dishwashers, expressed in cycles per kilowatt-hour is defined as:

(i) For dishwashers not having a truncated normal cycle, as defined in 1.10 of Appendix C to this subpart, the reciprocal of the total energy consumption per cycle for the normal cycle in kilowatt-hours per cycle, determined according to 5.5 of appendix C to this subpart, and

(ii) For dishwashers having a truncated normal cycle, as defined in 1.10 of appendix C to this subpart, the reciprocal of one-half the sum of—

(A) The total energy consumption per cycle for the normal cycle, plus

(B) The total energy consumption per cycle for the truncated normal cycle, each in kilowatt-hours per cycle and determined according to 5.5 of appendix C to this subpart.

(3) Other useful measures of energy consumption for dishwashers are those which the Secretary determines are likely to assist consumers in making purchasing decisions and which are

derived from the application of Appendix C to this subpart.

\* \* \* \* \*

3. Appendix C to Subpart B of Part 430 is revised to read as follows:

### Appendix C to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Dishwashers

#### 1. Definitions

1.1 *AHAM* means the Association of Home Appliance Manufacturers.

1.2 *Conventional dishwasher* means a dishwasher that does not have a mechanism to adjust the cycle and/or number of wash or rinse operations based on the soil load of the dishes.

1.3 *Cycle* means a sequence of operations of a dishwasher which performs a complete dishwashing function, and may include variations or combinations of washing, rinsing, and drying.

1.4 *Cycle type* means any complete sequence of operations capable of being preset on the dishwasher prior to the initiation of machine operation.

1.5 *Normal cycle* means the cycle type recommended by the manufacturer for completely washing a full load of normally soiled dishes including the power-dry feature.

1.6 *Power-dry feature* means the introduction of electrically generated heat into the washing chamber for the purpose of improving the drying performance of the dishwasher.

1.7 *Sensor normal cycle* means the range of operations in a soil-sensing dishwasher that constitutes the cycle type recommended by the manufacturer for completely washing a full load of normally soiled dishes including the power-dry feature.

1.8 *Sensor truncated normal cycle* means the sensor normal cycle preset to eliminate the power-dry feature after the termination of the last rinse operation.

1.9 *Soil-sensing dishwasher* means a dishwasher that has a mechanism to adjust the cycle and/or number of wash or rinse operations based on the soil load of the dishes.

1.10 *Truncated normal cycle* means the normal cycle preset to eliminate the power-dry feature after the termination of the last rinse operation.

1.11 *Water heating dishwasher* means a dishwasher which is designed for heating cold inlet water (nominal 50 °F) or a dishwasher for which the manufacturer recommends operation with a nominal inlet water temperature of 120 °F, and may operate at either of these inlet water temperatures by providing internal water heating to above 120 °F in at least one wash phase of the normal cycle.

#### 2. Test Conditions

2.1 *Installation Requirements.* Install the dishwasher according to the manufacturer's instructions. A standard or compact under-counter or under-sink dishwasher must be tested in a rectangular enclosure constructed of nominal 0.374 inch (9.5 mm) plywood painted black. The enclosure must consist of a top, a bottom, a back, and two sides. If the

dishwasher includes a counter top as part of the appliance, omit the top of the enclosure. Bring the enclosure into the closest contact with the appliance that the configuration of the dishwasher will allow.

#### 2.2 Electrical energy supply.

2.2.1 *Dishwashers that operate with an electrical supply of 115 volts.* Maintain the electrical supply to the dishwasher within two percent of 115 volts and within one percent of the nameplate frequency as specified by the manufacturer.

2.2.2 *Dishwashers that operate with an electrical supply of 240 volts.* Maintain the electrical supply to the dishwasher within two percent of 240 volts and within one percent of its nameplate frequency as specified by the manufacturer.

2.3 *Water temperature.* Measure the temperature of the water supplied to the dishwasher using a temperature measuring device as specified in 3.1 of this Appendix.

2.3.1 *Dishwashers to be tested at a nominal 140 °F inlet water temperature.* Maintain the water supply temperature at  $140 \pm 5$  °F.

2.3.2 *Dishwashers to be tested at a nominal 120 °F inlet water temperature.* Maintain the water supply temperature at  $120 \pm 2$  °F.

2.3.3 *Dishwashers to be tested at a nominal 50 °F inlet water temperature.* Maintain the water supply temperature at  $50 \pm 2$  °F.

2.4 *Water pressure.* Using a water pressure gauge as specified in 3.3 of this Appendix, maintain the pressure of the water supply at  $35 \pm 2.5$  pounds per square inch gauge (psig).

2.5 *Ambient and machine temperature.* Using a temperature measuring device as specified in 3.1 of this Appendix, maintain the room ambient air temperature at  $75 \pm 5$  °F, and ensure that the dishwasher and the test load are at room ambient temperature at the start of each test cycle.

#### 2.6 Load.

2.6.1 *Conventional dishwashers to be tested at a nominal inlet temperature of 140 °F.* These units must be tested on the normal cycle without a test load.

2.6.2 *Conventional dishwashers to be tested at a nominal inlet temperature of 50 °F or 120 °F.* These units must be tested on the normal cycle with a test load of eight place settings plus six serving pieces, as specified in Section 6 of AHAM Standard DW-1. If the capacity of the dishwasher, as stated by the manufacturer, is less than eight place settings, then the test load must be the stated capacity.

2.6.3 *Soil-sensing dishwashers to be tested at a nominal inlet temperature of 140 °F.* These units must be tested on the sensor normal cycle, as defined in 1.7 of this Appendix, without a test load.

2.6.4 *Soil-sensing dishwashers to be tested at a nominal inlet temperature of 50 °F or 120 °F.* These units must be tested on the sensor normal cycle, as defined in 1.7 of this Appendix, with a test load of eight place settings plus six serving pieces, as specified in section 6 of AHAM Standard DW-1. If the capacity of the dishwasher, as stated by the manufacturer, is less than eight place settings, then the test load must be the stated capacity.

2.7 *Testing requirements.* Provisions in this Appendix pertaining to dishwashers that operate with a nominal inlet temperature of 50 °F or 120 °F apply only to water heating dishwashers.

2.8 *Preconditioning cycle.* Perform a preconditioning cycle by establishing the testing conditions set forth in sections 2.1 through 2.5 of this Appendix. Set the dishwasher to the normal cycle without using a test load, initiate the cycle, and allow the cycle to proceed to completion. Ensure that the water lines and sump area of the pump are primed.

#### 3. Instrumentation

3.1 *Temperature measuring device.* The device must have an error no greater than  $\pm 1$  °F over the range being measured.

3.2 *Water meter.* The water meter must have a resolution of no larger than 0.1 gallons and a maximum error no greater than 1.5 percent for all water flow rates from one to five gallons per minute and for all water temperatures encountered in the test cycle.

3.3 *Water pressure gauge.* The water pressure gauge must have a resolution of one pound per square inch (psi) and must have an error no greater than 5 percent of any measured value over the range of  $35 \pm 2.5$  psig.

3.4 *Watt-hour meter.* The watt-hour meter must have a resolution of no greater than 1 watt-hour and a maximum error of no more than 1 percent of the measured value for any demand greater than 50 watts.

#### 4. Test Cycle and Measurements

4.1 *Test cycle.* Perform a test cycle by establishing the testing conditions set forth in section 2 of this Appendix, setting the dishwasher to the cycle type to be tested, initiating the cycle, and allowing the cycle to proceed to completion.

#### 4.2 Machine electrical energy consumption.

4.2.1 *Conventional dishwashers only.* Measure the electrical energy consumed by the machine during the test cycle,  $M$ , expressed in kilowatt-hours per cycle, using a water supply temperature as set forth in 2.3 of this Appendix and using a watt-hour meter as specified in 3.4.

4.2.2 *Soil-sensing dishwashers only.* Measure the electrical energy consumed by the machine during the minimum sensor normal cycle,  $M_{\min}$ , expressed in kilowatt-hours per cycle, using a water supply temperature as set forth in 2.3 of this Appendix and using a watt-hour meter as specified in 3.4. Measure the electrical energy consumed by the machine during the maximum sensor normal cycle,  $M_{\max}$ , expressed in kilowatt-hours per cycle, using a water supply temperature as set forth in 2.3 of this Appendix and using a watt-hour meter as specified in 3.4. If a manufacturer cannot artificially force a maximum sensor normal response, the manufacturer must introduce a soil load, as specified in the AHAM DW-1 performance test, and record the machine electrical energy consumption as  $M_{\max}$ .

#### 4.3 Water consumption.

4.3.1 *Conventional dishwashers only.* Measure the water consumption,  $V$ , specified as the number of gallons delivered to the

dishwasher during the entire test of the normal cycle, using a water meter as specified in 3.2 of this Appendix.

**4.3.2 Soil-sensing dishwashers only.** Measure the minimum water consumption,  $V_{\min}$ , specified as the number of gallons delivered to the dishwasher during the sensor normal test cycle, using a water meter as specified in 3.2 of this Appendix. Measure the maximum water consumption,  $V_{\max}$ , specified as the number of gallons delivered to the dishwasher during the maximum sensor normal test cycle, using a water meter as specified in 3.2 of this Appendix.

**4.4 Report values.** You must report the electrical energy consumption and water consumption values for the machine, as measured.

## 5. Calculation of Derived Results From Test Measurements

### 5.1 Machine energy consumption.

Determine the machine energy consumption for conventional or soil-sensing dishwashers according to sections 5.1.1 and 5.2.2, respectively. Use the notation  $M_n$  to represent the resulting value,  $M$ , for a test of the normal or sensor normal cycle and  $M_t$  to represent the resulting value,  $M$ , for a test of the truncated normal or sensor truncated normal cycle.

**5.1.1 Conventional dishwashers only.** For each test cycle (normal or truncated normal), use the measured value recorded in section 4.2.1 as the per-cycle machine electrical energy consumption,  $M$ , expressed in kilowatt-hours per cycle.

**5.1.2 Soil-sensing dishwashers only.** For each test cycle (sensor normal or sensor truncated normal), calculate the electrical energy consumption for the machine,  $M$ , expressed in kilowatt-hours per cycle and defined as:

$$M = [M_{\min} \times (P) + M_{\max} \times (1 - P)]$$

where,

$M_{\min}$ =the machine electrical energy consumption during the sensor normal cycle as measured according to section 4.2.2.

$P$ =the fraction of residential dishwasher owners that pre-treat dishes=0.70.

$M_{\max}$ =the machine electrical energy consumption with the maximum sensor normal response as measured according to section 4.2.2.

$(1-P)$ =the fraction of residential dishwasher owners that do not pre-treat dishes=0.30.

**5.2 Water consumption per cycle for soil-sensing dishwashers only.** For each test cycle (sensor normal or sensor truncated normal), calculate the water consumption,  $V$ , expressed in gallons per cycle and defined as:

$$V = [V_{\min} \times (P) + V_{\max} \times (1 - P)]$$

where,

$V_{\min}$ =the water consumption during the minimum sensor normal cycle, as measured according to section 4.3.2.

$P$ =the fraction of residential dishwasher owners that pre-treat dishes = 0.70.

$V_{\max}$ =the water consumption with the maximum sensor normal response, as measured according to section 4.3.2.

$(1-P)$ =the fraction of residential dishwasher owners that do not pre-treat dishes = 0.30.

**5.3 Water energy consumption per cycle for dishwashers using electrically heated water.** Determine the water energy consumption for conventional dishwashers according to sections 5.3.1.1 and 5.3.2.1. Determine the water energy consumption for soil-sensing dishwashers according to sections 5.3.1.2 and 5.3.2.2. Use the notation  $W_{en}$  to represent the resulting value,  $W_e$ , for a test of the normal or sensor normal cycle and  $W_{et}$  to represent the resulting value,  $W_e$ , for a test of the truncated normal or sensor truncated normal cycle.

**5.3.1 Dishwashers that operate with a nominal 140 °F inlet water temperature, only.**

**5.3.1.1 Conventional dishwashers.** For each test cycle, calculate the water energy consumption,  $W_e$ , expressed in kilowatt-hours per cycle and defined as:

$$W_e = V \times T'' \times K$$

where,

$V$ =reported water consumption in gallons per cycle, as measured in 4.3.1 of this Appendix.

$T''$ =nominal water heater temperature rise=90 °F.

$K$ =specific heat of water in kilowatt-hours per gallon per degree Fahrenheit=0.0024.

**5.3.1.2 Soil-sensing dishwashers.** For each test cycle, calculate the water energy consumption,  $W_e$ , expressed in kilowatt-hours per cycle and defined as:

$$W_e = V \times T'' \times K$$

where,

$V$  is calculated in 5.2 of this Appendix.

$T''$ =nominal water heater temperature rise=90 °F.

$K$ =specific heat of water in kilowatt-hours per gallon per degree Fahrenheit=0.0024.

**5.3.2 Dishwashers that operate with a nominal inlet water temperature of 120 °F.**

**5.3.2.1 Conventional dishwashers.** For each test cycle, calculate the water energy consumption,  $W_e$ , expressed in kilowatt-hours per cycle and defined as:

$$W_e = V \times T' \times K$$

where,

$V$ =reported water consumption in gallons per cycle, as measured in 4.3.1 of this Appendix.

$T'$ =nominal water heater temperature rise=70 °F.

$K$ =specific heat of water in kilowatt-hours per gallon per degree Fahrenheit=0.0024.

**5.3.2.2 Soil-sensing dishwashers.** For each test cycle, calculate the water energy consumption,  $W_e$ , expressed in kilowatt-hours per cycle and defined as:

$$W_e = V \times T' \times K$$

where,

$V$  is calculated in 5.2 of this Appendix.

$T'$ =nominal water heater temperature rise=70 °F.

$K$ =specific heat of water in kilowatt-hours per gallon per degree Fahrenheit=0.0024.

**5.4 Water energy consumption per cycle using gas-heated or oil-heated water.**

Determine the water energy consumption for conventional dishwashers according to §§ 5.4.1.1 and 5.4.2.1. Determine the water

energy consumption for soil-sensing dishwashers according to sections 5.4.1.2 and 5.4.2.2. Use the notation  $W_{gn}$  to represent the resulting value,  $W_g$ , for a test of the normal or sensor normal cycle and  $W_{gt}$  to represent the resulting value,  $W_g$ , for a test of the truncated normal or sensor truncated normal cycle.

**5.4.1 Dishwashers that operate with a nominal 140 °F inlet water temperature, only.**

**5.4.1.1 Conventional dishwashers.** For each test cycle, calculate the water energy consumption using gas-heated or oil-heated water,  $W_g$ , expressed in Btus per cycle and defined as:

$$W_g = V \times T'' \times C/e$$

where,

$V$ =reported water consumption in gallons per cycle, as measured in 4.3.1 of this Appendix.

$T''$ =nominal water heater temperature rise=90 °F.

$C$ =specific heat of water in Btus per gallon per degree Fahrenheit=8.20.

$e$ =nominal gas or oil water heater recovery efficiency=0.75.

**5.4.1.2 Soil-sensing dishwashers.** For each test cycle, calculate the water energy consumption using gas heated or oil heated water,  $W_g$ , expressed in Btus per cycle and defined as:

$$W_g = V \times T'' \times C/e$$

where,

$V$  is calculated in 5.2 of this Appendix.

$T''$ =nominal water heater temperature rise=90 °F.

$C$ =specific heat of water in Btus per gallon per degree Fahrenheit=8.20.

$e$ =nominal gas or oil water heater recovery efficiency=0.75.

**5.4.2 Dishwashers that operate with a nominal inlet water temperature of 120 °F.**

**5.4.2.1 Conventional dishwashers.** For each test cycle, calculate the water energy consumption using gas heated or oil heated water,  $W_g$ , expressed in Btus per cycle and defined as:

$$W_g = V \times T' \times C/e$$

where,

$V$  is measured in 4.3.1 of this Appendix.

$T'$ =nominal water heater temperature rise=70 °F.

$C$ =specific heat of water in Btus per gallon per degree Fahrenheit=8.20.

$e$ =nominal gas or oil water heater recovery efficiency=0.75.

**5.4.2.2 Soil-sensing dishwashers.**

Calculate for the cycle type under test the water energy consumption per cycle using gas heated or oil heated water,  $W_g$ , expressed in Btus per cycle and defined as:

$$W_g = V \times T' \times C/e$$

where

$V$  is calculated in 5.2 of this Appendix.

$T'$ =nominal water heater temperature rise=70 °F.

$C$ =specific heat of water in Btus per gallon per degree Fahrenheit=8.20.

$e$ =nominal gas or oil water heater recovery efficiency=0.75.

**5.5 Total energy consumption per cycle.** For each test cycle, calculate the total per-cycle energy consumption,  $E$ , expressed in

kilowatt-hours per cycle, and defined as the sum of the per-cycle machine electrical energy consumption, M, plus the per-cycle water energy consumption of electrically-heated water, W, calculated for the cycle type, according to 5.1 and 5.3 respectively.

4. Section 430.32 of Subpart C is amended by revising paragraph (f) to read as follows:

**§ 430.32 Energy and water conservation standards and effective dates.**

\* \* \* \* \*

(f) *Dishwashers.* The energy factor of dishwashers manufactured on or after May 14, 1994, must not be less than:

Product class	Energy factor (cycles/KWh)
(1) Compact Dishwasher (capacity less than eight place settings plus six serving pieces as specified in section 6 of AHAM Standard DW-1) .....	0.62
(2) Standard Dishwasher (capacity equal to or greater than eight place settings plus six serving pieces as specified in section 6 of AHAM Standard DW-1) .....	0.46

\* \* \* \* \*

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**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

[Docket No. 99-NE-39-AD]

RIN 2120-AA64

**Airworthiness Directives; CFE Company Model CFE738-1-1B Turbofan Engines**

**AGENCY:** Federal Aviation Administration, DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** This document proposes the adoption of a new airworthiness directive (AD) that is applicable to CFE Company Model CFE738-1-1B turbofan engines. This proposal would require, on certain engines identified by serial numbers, a one-time visual inspection of Stage 2 high pressure turbine (HPT) aft cooling plates, for nicks, dents, and scratches, and if present, dimensional inspection of indentation depth, repair if indentation is within acceptable limits, and, if necessary, replacement with serviceable parts. This AD would also require inspection of the Stage 2

HPT rotor disk post aft surface which mates with the Stage 2 HPT aft cooling plate, for raised metal and removal of the raised metal, if present. This proposal is prompted by reports of dented Stage 2 HPT aft cooling plates which occurred during the assembly of the cooling plate to the Stage 2 disk due to raised metal on the stage 2 HPT disk post aft mating surface. The actions specified by the proposed AD are intended to prevent aft HPT cooling plate failure, which could result in an uncontained engine failure and damage to the airplane.

**DATES:** Comments must be received by November 29, 1999.

**ADDRESSES:** Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 99-NE-39-AD, 12 New England Executive Park, Burlington, MA 01803-5299. Comments may also be sent via the Internet using the following address: "9-ane-adcomment@faa.gov". Comments sent via the Internet must contain the docket number in the subject line. Comments may be inspected at this location between 8:00 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays.

The service information referenced in the proposed rule may be obtained from CFE Company, Data Distribution, MS 64-03/2101-201, P.O. Box 52170, Phoenix, AZ 85972-2170; telephone (602) 365-2493, fax (602) 365-5577. This information may be examined at the FAA, New England Region, Office of the Regional Counsel, 12 New England Executive Park, Burlington, MA.

**FOR FURTHER INFORMATION CONTACT:** Keith Mead, Aerospace Engineer, Engine Certification Office, FAA, Engine and Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803-5299; telephone (781) 238-7744, fax (781) 238-7199.

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should identify the Rules Docket number and be submitted in triplicate to the address specified above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this notice may be changed in light of the comments received.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the Rules Docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: "Comments to Docket Number 99-NE-39-AD." The postcard will be date stamped and returned to the commenter.

**Availability of NPRMs**

Any person may obtain a copy of this NPRM by submitting a request to the FAA, New England Region, Office of the Regional Counsel, Attention: Rules Docket No. 99-NE-39-AD, 12 New England Executive Park, Burlington, MA 01803-5299.

**Discussion**

The Federal Aviation Administration (FAA) has received reports of certain Stage 2 high pressure turbine (HPT) aft cooling plates, installed on CFE Company Model CFE738-1-1B turbofan engines, that were dented during the assembly of the cooling plate to the stage 2 disk due to raised metal on the aft mating face of the Stage 2 HPT rotor disk post. During the assembly of the high-pressure turbine rotor, the Stage 2 disk is restrained with a special tool fixture. It has been determined that a condition occurring in this fixture as early as January 1998, may have resulted in raised metal on the disk post aft surface, which interfaces with the aft cooling plate. The higher the raised metal on the disk post, the deeper the dent in the cooling plate. The fixture has been repaired to prevent further occurrences and engines which may be effected by this condition have been identified by serial numbers. Analysis indicates that nicks, dents, and scratches on the Stage 2 HPT aft cooling plate exceeding a certain depth would result in a reduction in part cyclic life. This condition, if not corrected, could result in aft HPT cooling plate failure, which could result in an uncontained engine failure and damage to the airplane.

**Service Information**

The FAA has reviewed and approved the technical contents of CFE Alert