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DEPARTMENT OF ENERGY

10 CFR Part 431

[Docket Number EERE-2015-BT-STD-0008]

RIN 1904-AD52

Energy Conservation Program for Certain Industrial Equipment: Energy Conservation Standards for Dedicated-Purpose Pool Pumps; Request for Information

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

ACTION: Request for information (RFI).

SUMMARY: The U.S. Department of Energy (DOE) is requesting information to inform a potential rulemaking to consider new energy conservation standards for dedicated-purpose pool pumps. Pumps, which are already covered equipment under the Energy Policy and Conservation Act of 1975, as amended (EPCA), come in a variety of forms – including dedicated-purpose pool pumps. This RFI seeks to solicit information to help DOE determine the feasibility of developing energy conservation standards and an

appropriate test procedure for this equipment. This RFI outlines the potential scope that could be involved in regulating dedicated-purpose pool pumps, possible industry-based testing methods that could be used to evaluate the efficiency of this equipment, and the types of information that would be needed in analyzing the potential for setting standards for this equipment. This RFI also solicits the public for information to help inform DOE's efforts in evaluating the prospect of regulating this equipment.

DATES: Written comments and information are requested on or before **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].**

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at: <http://www.regulations.gov>. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by Docket number EERE-2015-BT-STD-0008, by any of the following methods:

- 1) E-mail: to PoolPumps2015STD0008@ee.doe.gov. Include EERE-2015-BT-STD-0008 in the subject line of the message. Submit electronic comments in WordPerfect, Microsoft Word, PDF, or ASCII file format, and avoid the use of special characters or any form of encryption.
- 2) Mail: Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, Mailstop EE-2J, Revisions to Energy Efficiency Enforcement Regulations, EERE-2015-BT-STD-0008, 1000 Independence Avenue, SW., Washington, DC 20585- 0121. Phone: (202) 586-2945. If

possible, please submit all items on a CD, in which case it is not necessary to include printed copies.

- 3) Hand Delivery/Courier: Ms. Brenda Edwards, U.S. Department of Energy, Building Technologies Program, 6th Floor, 950 L'Enfant Plaza, SW., Washington, DC 20024. Phone: (202) 586-2945. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.
- 4) Instructions: All submissions received must include the agency name and docket number or RIN for this rulemaking.

Docket: For access to the docket to read background documents, or comments received, go to the Federal eRulemaking Portal at <http://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT: Requests for additional information may be sent to Mr. John Cymbalsky, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, EE-2J, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-7935. E-mail: pumps@ee.doe.gov.

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For information on how to submit or review public comments, contact Ms. Brenda Edwards, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Program, Mailstop EE-2J, 1000 Independence Avenue, SW, Washington, DC 20585-0121. Telephone: (202) 586-2945. E-mail: Brenda.Edwards@ee.doe.gov.

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I. Introduction

A. Statutory Authority

Title III, Part C¹ of the Energy Policy and Conservation Act of 1975 (“EPCA” or, in context, “the Act”), Pub. L. 94-163, (42 U.S.C. 6311–6317, as codified) established the Energy Conservation Program for Certain Industrial Equipment, a program covering certain industrial equipment.² “Pumps” are listed as a type of covered industrial equipment. (42 U.S.C. 6311(1)(A)) Under EPCA, the energy conservation program consists essentially of four parts: (1) testing, (2) labeling, (3) Federal energy conservation standards, and (4) certification and enforcement procedures.

While pumps are treated as a type of covered equipment, EPCA does not define what a pump is. To address this issue, DOE recently published a notice of proposed rulemaking (“NOPR”) that would establish definitions and test procedures for pumps. That proposal (hereafter “the pumps test procedure NOPR”), proposed to define dedicated-purpose pool pumps to be a category of pump. 80 FR 17586, 17641 (April 1, 2015).

B. Background

Currently, no Federal energy conservation standards exist for any types of pumps, including dedicated-purpose pool pumps (i.e. “pool pumps”). DOE excluded this category of pumps from its recent efforts to develop consensus-based energy

¹ For editorial reasons, upon codification in the U.S. Code, Part C was re-designated Part A-1.

² All references to EPCA refer to the statute as amended through the American Energy Manufacturing Technical Corrections Act (AEMTCA), Pub. L. 112-210 (Dec. 18, 2012).

conservation standards and an appropriate test procedure for pumps. See 80 FR 17826 (April 2, 2015) (proposing consensus-based energy conservation standards for pumps) and 80 FR 17586 (April 1, 2015) (proposing test procedures for certain categories of pumps). Those efforts, which were the product of a pumps working group (“working group”) that had been created through the Appliance Standards Rulemaking Federal Advisory Committee (“ASRAC”), examined a variety of categories of pumps. While pool pumps were one of the pump categories that were actively considered during the working group’s discussions to regulate pump energy consumption, the working group ultimately recommended that DOE initiate a separate rulemaking to address this category of pumps. (Docket No. EERE-2013-BT-NOC-0039, No. 0092 at p. 2) Consistent with that recommendation, DOE is issuing this request for information (“RFI”) to examine the feasibility of establishing standards for pool pumps. The working group’s recommendations and related documentation are contained in Docket No. EERE-2013-BT-NOC-0039, which is available at <http://www.regulations.gov>.

C. Regulatory Process

Prior to issuing a proposed rulemaking to establish energy conservation standards for a given type of product or equipment, DOE typically issues a Framework document, in which DOE describes the issues, analyses, and process that it is considering for the development of energy conservation standards. After receiving comment on the Framework document, DOE typically prepares a preliminary analysis and associated preliminary Technical Support Document (“TSD”). The preliminary analysis provides interested parties with an initial draft of potential energy conservation standard levels that

DOE may consider along with their potential impacts on consumers, manufacturers, and the nation.

Following these steps, DOE would publish a NOPR to propose a new or amended conservation standard. As with the prior steps outlined above, DOE would afford interested parties an opportunity to provide oral and written comment on the proposal. See generally 42 U.S.C. 6295(p) and 6316(a). The NOPR presents DOE's proposed energy conservation standard levels and a summary of both the burdens and benefits of the proposed standards, pursuant to 42 U.S.C. 6295(o)(2)(B)(i) and 6313(a). The details of DOE's standards analysis are provided in an accompanying TSD. After receiving and considering comments on the NOPR, DOE may issue a final rule that would prescribe new energy conservation standards. The analysis of any final standards would also be contained in a TSD accompanying the final rule.

In a test procedure rulemaking, DOE prepares a NOPR and provides interested parties an opportunity to present oral and written comments, data, information, views and arguments with respect to such test procedure. (42 U.S.C. 6314(b)) DOE takes into account relevant information and comments submitted by interested parties and will adopt any new test procedures, including relevant sampling provisions and rating information, in a test procedure final rule.

With respect to the dedicated-purpose pool pumps at issue, DOE is considering, but has not yet decided, to use an alternative rulemaking approach to the one described

above. In particular, DOE is considering pursuing a negotiated rulemaking. In DOE's experience, a negotiated rulemaking can be an efficient and effective mechanism for establishing test procedures and energy conservation standards for commercial equipment, especially for equipment that has not previously been subject to Federal standards. Using this approach, DOE would engage in discussions with interested parties (in lieu of the Framework document and preliminary analysis stages) to help frame and develop the specifics of the NOPR, which would be subject to public comment prior to the issuance of a final rule.

Issue 1: DOE requests feedback on whether a negotiated rulemaking would be an appropriate mechanism to pursue energy conservation standards and test procedures for dedicated-purpose pool pumps. If commenters believe a negotiated rulemaking should be pursued for dedicated-purpose pool pumps, DOE requests suggestions from interested parties regarding persons or entities that might be interested in taking part in such a negotiation, including efficiency advocates, manufacturers, customers, utility representatives, and any other interested parties.

Should DOE decide to initiate a rulemaking to explore new energy conservation standards for dedicated-purpose pool pumps, DOE is required to follow certain statutory criteria. EPCA requires that any new or amended energy conservation standard be designed to achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A) and 6316(a)) To determine whether a standard is economically justified, DOE must determine

whether the benefits of the standard exceed its burdens by considering, to the greatest extent practicable, seven factors. (42 U.S.C. 6295(o)(2)(B)(i) and 6316(a)) These factors, as well as the series of analyses DOE conducts to fulfill these requirements, are shown in Table I.1

Table I.1 Energy Policy and Conservation Act Requirements and Corresponding Department of Energy Analyses

EPCA Requirement	Corresponding DOE Analyses
Technological Feasibility	<ul style="list-style-type: none"> • Market and Technology Assessment • Screening Analysis • Engineering Analysis
Economic Justification (7 Factors)	
1. Economic impact on manufacturers and consumers	<ul style="list-style-type: none"> • Manufacturer Impact Analysis • Life-Cycle Cost and Payback Period Analysis • Life-Cycle Cost Subgroup Analysis • Shipments Analysis
2. Lifetime operating cost savings compared to increased cost for the product	<ul style="list-style-type: none"> • Markups for Product Price Determination • Energy Use Determination • Life-Cycle Cost and Payback Period Analysis
3. Total projected energy savings	<ul style="list-style-type: none"> • Shipments Analysis • National Impact Analysis
4. Impact on utility or performance	<ul style="list-style-type: none"> • Screening Analysis • Engineering Analysis
5. Impact of any lessening of competition	<ul style="list-style-type: none"> • Manufacturer Impact Analysis
6. Need for national energy conservation	<ul style="list-style-type: none"> • Shipments Analysis • National Impact Analysis • Emissions Analysis • Utility Impact Analysis • Monetization of Emission Reductions Benefits
7. Other factors the Secretary considers relevant	These factors are rulemaking-specific

II. Discussion

A. Review of Existing Regulatory and Voluntary Programs

DOE reviewed several existing and proposed regulatory and voluntary energy conservation programs for pool pumps. These programs are described below.

1. California Energy Commission

The California Energy Commission (CEC) first issued standards for residential pool pumps under the California Code of Regulations 2006.³ See Cal. Code Regs., tit. 20, § 1601-1608 (2013). The CEC standards were subsequently adopted by a number of other States.⁴ The CEC's regulations cover all residential pool pump and motor combinations, replacement residential pool pump motors, and portable electric spas.

The CEC's current standard has prescriptive design requirements instead of performance based regulations for residential pool pump and motor combinations. See Cal. Code Regs., tit. 20, § 1605.3, subd. (g)(5). The CEC defines "residential pool pump and motor combination" as a residential pool pump motor coupled to a residential pool pump. "Residential pool pump" is defined as an impeller attached to a motor that is used to circulate and filter pool water in order to maintain clarity and sanitation. "Residential pool pump motor" refers to a motor that is used as a replacement residential pool pump

³ California Energy Commission. "Appliance Efficiency Regulations." December 2006. CEC-400-2006-002-REV2. Available at: <http://www.energy.ca.gov/2006publications/CEC-400-2006-002/CEC-400-2006-002-REV2.PDF>

⁴ See, e.g. [Ariz. Rev. Stat. § 44-1375 \(2015\)](#); [Conn. Agencies Regs. § 16a-48.4 \(2015\)](#); [Fla. Stat. Ann. § 533.909 \(2015\)](#); and [Wash. Rev. Code Ann. §19.260.040 \(2015\)](#).

motor or as part of a residential pool pump and motor combination. (Motors used in these applications are electrically-driven.) The CEC imposes a design standard that prohibits the use of split phase start⁵ and capacitor start – induction run⁶ motor designs in residential pool pump motors manufactured on or after January 1, 2006. (Id. § 1605.3, subd. (g)(5)(A)) The CEC also requires that residential pool pump motors with a motor capacity⁷ of 1 horsepower (hp) or greater manufactured on or after January 1, 2010, have the capability of operating at two or more speeds. The “low” speed must have a rotation rate that is no more than one-half of the motor’s maximum rotation rate, and must be operated with an applicable multi-speed pump control. (Id. § 1605.3, subd. (g)(5)(B))

The CEC also prescribes design requirements for pump controls. Pump motor controls that are manufactured on or after January 1, 2008, and are sold for use with a pump that has two or more speeds are required to be capable of operating the pool pump at a minimum of two speeds. The default circulation speed setting shall be no more than one-half of the motor’s maximum rotation rate, and high speed overrides should be temporary and not for a period exceeding 24 hours. (Id. § 1605.3, subd. (g)(5)(B))⁸

⁵ Defined as: a motor that employs a main winding with a starting winding to start the motor. After the motor has attained approximately 75 percent of rated speed, the starting winding is automatically disconnected by means of a centrifugal switch or by a relay. Cal. Code Regs., tit. 20, § 1602, subd. (g)

⁶ Defined as: a motor that uses a capacitor via the starting winding to start an induction motor, where the capacitor is switched out by a centrifugal switch once the motor is up to speed. Cal. Code Regs., tit. 20, § 1602, subd. (g)

⁷ Defined as a value equal to the product of motor's nameplate hp and service factor and also referred to a “total hp,” where “service factor (of an AC motor)” means a multiplier which, when applied to the rated hp, indicates a permissible hp loading which can be carried under the conditions specified for the service factor. Cal. Code Regs., tit. 20, § 1602, subd. (g).

⁸ California Energy Commission, 2014 Appliance Efficiency Regulations, available at <http://www.energy.ca.gov/2014publications/CEC-400-2014-009/CEC-400-2014-009-CMF.pdf>

In addition to these prescriptive design requirements, the CEC also requires manufacturers of residential pool pump and motor combinations and manufacturers of replacement residential pool pump motors⁹ to report certain data regarding the characteristics of their certified equipment. This includes information necessary to verify compliance with the requirements of § 1605.3(g)(5), as well as the tested flow and input power of the equipment at several specific load points. Manufacturers must also submit the pool pump and motor combinations' Energy Factor (EF) in gallons per Watt-hour (gal/Wh) when tested in accordance with the specified test procedure for residential pool pumps. See Cal. Code Regs., tit. 20, § 1604(g)(3) (see section II.C below for more information).

DOE understands that the CEC is considering revising its pool pump regulations. A recent report by the CEC, "Analysis of Standards Proposal for Residential Swimming Pool and Portable Spa Equipment,"¹⁰ considers updated regulations for all single-phase dedicated-purpose pool pump motors under 5 total hp (THP).¹¹ This report recommends that pool pump motors be covered regardless of whether they are sold with a new pump, or sold as replacement for use with an existing pump wet-end. The report also recommends regulating pool pump motors regardless of whether it is used in an

⁹ Defined as a replacement motor intended to be coupled to an existing residential pool pump that is used to circulate and filter pool water in order to maintain clarity and sanitation. Cal. Code Regs., tit. 20, § 1602, subd. (g)

¹⁰ Analysis of Standards Proposal for Residential Swimming Pool and Portable Spa Equipment, California Energy Commission. Available at http://www.energy.ca.gov/appliances/2013rulemaking/documents/proposals/12-AAER-2F_Residential_Pool_Pumps_and_Replacement_Motors/California_IOUs_Response_to_the_Invitation_to_Submit_Proposals_for_Pool_and_Spas_2013-07-29_TN-71756.pdf

¹¹ Total hp is the product of motor service factor and motor nameplate (rated) hp.

application that requires filtration. Additionally, the report recommends that the CEC move to performance based standards, rather than prescriptive design requirements.

2. ENERGY STAR

The ENERGY STAR^{®12} specifications for pool pumps¹³ provide criteria for how a product can earn the ENERGY STAR label. The specification is applicable to single-phase residential inground pool pumps that are single-speed, multi-speed, variable-speed, or variable-flow, and have a hp rating of between >0.5 and ≤ 4 THP. ENERGY STAR defines a residential inground pool pump as a primary filter pump intended for installation with a permanently installed Residential Inground Swimming Pool with dimensions as defined in American National Standards Institute (ANSI)/National Spa and Pool Institute (NSPI)-5 (ANSI/NSPI-5 2003), “Standard for Residential Inground Swimming Pools.” Further, ENERGY STAR specifically excludes residential above ground pool pumps¹⁴, residential auxiliary pool pumps¹⁵, and residential portable spa pumps¹⁶ from ENERGY STAR certification.

¹² ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and DOE that establishes a voluntary rating, certification, and labeling program for highly energy efficient consumer products and commercial equipment. Information on the program is available at www.energystar.gov/index.cfm?c=home.index.

¹³ U.S. EPA. “ENERGY STAR[®] Program Requirements for Pool Pumps Version 1.0”. Available at <http://www.energystar.gov/sites/default/files/specs//private/ENERGY%20STAR%20Pool%20Pump%20Version%201%200%20Program%20Requirements%202-15-2013.pdf>

¹⁴ Defined as a primary filter pump intended for installation with a permanently installed Residential Aboveground/Onground Swimming Pool as defined in ANSI/APSP- 4 2007, “Standard for Aboveground/Onground Residential Swimming Pools.”

¹⁵ Defined as a pump intended for purposes other than a primary pool filter pump, i.e. such as a pool cleaner booster pump or water feature pumps.

¹⁶ Defined as a pump intended for installation with a non-permanently installed residential spa as defined in ANSI/NSPI-6 (ANSI/NSPI-6 1999), “Standard for Portable Spas.” Sometimes referred to as a hot tub pump, but not a jetted bathtub pump.

The ENERGY STAR specifications for residential pool pumps establish a required EF for the equipment. EF is defined as the volume of water pumped in gallons, divided by the electrical energy consumed by the pump motor while pumping that water. The EF rating is established separately for single-speed and multi-speed pumps, as shown in Table .

Table II.1 Pool Pump Energy Factor Criteria at Pool Pump Performance Curve A*

Pump Sub-Type	Speed Setting	Energy Efficiency Level (gal/Wh)
Single-speed pump	Single-Speed	EF ≥ 3.80
Multi-speed, Variable-speed and Variable-flow pump	Most Efficient Speed	EF ≥ 3.80

* ENERGY STAR requires that residential inground pool pumps be tested in accordance with their Final Test Method, that is established as part of the ENERGY specification. The ENERGY STAR Final Test Method defines three curves that are applicable to the testing of pool pumps, Curve A, B, and C. See <http://www.energystar.gov/sites/default/files/specs//private/ENERGY%20STAR%20Pool%20Pump%20Version%201%200%20Program%20Requirements%202-15-2013.pdf>.

Regarding multi-speed pumps, ENERGY STAR specifically excludes multi-speed pumps with manual pump controls that are not sold ready to connect to external pump controls. ENERGY STAR also differentiates between variable-speed pumps that can operate at continuously variable speeds and variable-flow pumps that are equipped with controls that can continuously vary speed to control flow.

3. Consortium for Energy Efficiency

Effective on January 1, 2013, the Consortium for Energy Efficiency (CEE) established voluntary testing, rating, and labeling requirements to encourage the market penetration of high-efficiency swimming pool pumps and pool pump controllers¹⁷. CEE’s

¹⁷ Consortium for Energy Efficiency (CEE). “High Efficiency Residential Swimming Pool Initiative: Pool Pump Specification.” January 1, 2013. Available at: http://library.cee1.org/sites/default/files/library/9987/cee_residential_pool_pump_specification_90947.pdf

testing and performance requirements for pool pumps features two “tiers” and are specified in terms of EF. These requirements are shown in Table .

Table II.2 CEE Tier 1 and 2 EF Requirements

Efficiency Level	Lower Speed* EF (gal/Wh)	Low Speed** EF (gal/Wh)	High Speed† EF (gal/Wh)
CEE Tier 1	No requirement	≥ 3.8	≥ 1.6
CEE Tier 2	≥ 12.0	≥ 5.5	≥ 1.7

* Where “lower speed” is the optimal or most efficient speed for the pool pump, likely ranging from 600 to 1200 RPM.

** Where “low speed” is either the minimum speed for two-speed pumps or half the maximum speed for variable-speed pumps, typically 1725 RPM.

† Where “high speed” is the maximum operating speed of the pump, usually 3450 RPM.

CEE’s performance requirements for pool pump controls feature two tiers, with similar requirements to those adopted by the CEC. Under the CEE program, a pool pump control must:

- 1) have the ability to operate the pool pump at either two (for tier 1) or more than two (for tier 2) speeds;
- 2) contain a default filtration speed that is no more than one-half of the motor’s maximum rotation speed; and
- 3) contain a default setting that returns the pool pump to the lowest user preset speed within one cycle, or 24 hours.

Consortium for Energy Efficiency (CEE). “High Efficiency Residential Swimming Pool Initiative: Pool Pump Control Specification.” January 1, 2013. Available at: http://library.cee1.org/sites/default/files/library/9988/cee_residential_pool_pump_control_specification_29414.pdf

4. Australia and New Zealand

The Australia state and territory governments and the New Zealand government operate the Energy Rating Labeling Program. The Energy Rating program established the voluntary Energy Rating Labeling Program for swimming pool pump-units in April 2010.¹⁸ This program establishes testing, labeling, and minimum efficiency requirements for swimming pool pumps for suppliers who choose to participate.¹⁹ The program relies on Australian Standard (AS) 5102-2009, “Performance of household electrical appliances – Swimming pool pump –units, Parts 1 and 2” (AS 5102-2009) as the basis for the efficiency levels and testing requirements for residential pool pumps. The AS 5102-2009 standard:

- 1) applies to pumps intended to be used in swimming pools and spa pools;
- 2) covers all single-phase pumps that are capable of a flow rate equal to or greater than 120 L/min (32 gpm);
- 3) applies to single-speed, dual-speed, multi-speed, and variable-speed pumps with an input power of less than or equal to 2500 W for any of the available speeds;
- 4) covers pumps for the circulation of water through pool filters, sanitization devices, cleaning devices, water heaters (including solar), and pumps for circulation of water through spa or jet outlets or other features forming part of the pool;

¹⁸ Summary of the Voluntary Energy Rating Labelling Program for Swimming Pool Pump-Units Available at: <http://www.energyrating.gov.au/for-industry/regulation-information-for-industry/product-standards/overview/as5102/>

¹⁹ Voluntary Energy Rating Labelling Program for Swimming Pool Pump-Units: Rules for Participation. Available at: <http://www.energyrating.gov.au/wp-content/uploads/2011/02/201002-swimmingpoolpump-labelling1.pdf>.

- 5) covers newly manufactured pumps that form part of a complete new pool installation or intended for sale as replacements for existing pools; and
- 6) covers all water-retaining structures designed for human use -
- (i) that are capable of holding more than 680 liters of water²⁰ (179.6 gallons), and
 - (ii) that incorporate, or are connected to, equipment that is capable of filtering and heating any water contained in it and injecting air bubbles or water into it under pressure so as to cause water turbulence.

The minimum energy performance standard (MEPS) in part 2 of AS 5102-2009 is stated in terms of a minimum EF. Specifically, the current MEPS is 8 liters/watt-hour (2.09 gallons/Wh).

5. European Union

The European Union is considering regulations for private and public pool pumps. In 2014, the European Commission completed a study on pumps for private and public swimming pools, along with other pump products under the Ecodesign Directive.²¹ The goal of the study is to provide the European Commission with an assessment of the energy savings potential and feasibility of different types of performance-based or design standards for such equipment. The study considered input from various stakeholders,

²⁰ The standard explicitly exclude residential pool pumps designed for use in spa baths (i.e., water retaining structures less than or equal to 680 liters/180 gallons).

including representatives from manufacturing companies, energy efficiency advocates, and government agencies. The Ecodesign Directive published the results of their study on March 28, 2014.²² DOE has reviewed the available information and will continue to monitor these efforts.

B. Scope

The CIP Working Group recommended that DOE initiate a separate rulemaking for dedicated-purpose pool pumps. (Docket No. EERE-2013-BT-NOC-0039, No. 92) Therefore, in the pumps test procedure NOPR, DOE proposed to explicitly define the category of pumps referred to as dedicated-purpose pool pumps, based on their distinct construction and resulting operational characteristics and utility, and also proposed that the test procedure proposed in the NOPR would not address or be applicable to such pumps. *See* 80 Fed. Reg. 17586, 17597 (April 1, 2015).

In considering the establishment of test procedures and energy conservation standards for dedicated-purpose pool pumps, DOE would first establish the criteria specifying the scope of applicable equipment that would be regulated, including physical characteristics, operating parameters, equipment types, and equipment configuration.

²² Work on Preparatory studies for implementing measures of the Ecodesign Directive 2009/125/EC: ENER Lot 29 - Pumps for Private and Public Swimming Pools, Ponds, Fountains, and Aquariums (and clean water pumps larger than those regulated under ENER Lot 11) Tasks 1 - 8. Available at: <http://lot29.ecopumps.eu/documents>

1. Definitions

In the pumps test procedure NOPR, DOE proposed a new definition for dedicated-purpose pool pumps. DOE intended for this definition to apply to pumps used to circulate water through the filtration system in a stationary pool. Based on input from interested parties provided during the negotiated rulemaking process (Docket No. EERE-2013-BT-NOC-0039, No. 62 at p. 195), DOE used the presence of an integrated basket strainer to differentiate dedicated-purpose pool pumps from other end suction close-coupled (ESCC) and end suction frame-mounted (ESFM) pumps that may otherwise be within the scope of the pumps test procedure NOPR. 80 FR at 17597. The proposed definition would treat an end suction pump designed specifically to circulate water in a pool and that includes an integrated basket strainer as a dedicated-purpose pool pump. See 80 FR at 17641.

DOE's preliminary review of industry literature indicates that although most models marketed as pool pumps are sold with an integrated basket strainer, some are sold without one. Of the models sold without a basket strainer, most are configured to accept a basket strainer that is sold separately.

DOE notes that non-self-priming end suction pumps that are used in pool applications but are sold without an integrated basket strainer and are ≥ 1 hp will meet the definition of either an ESCC or ESFM pump as proposed in the pumps test procedure NOPR. 80 FR at 17641 (April 1, 2015). DOE also notes that self-priming pumps of any

hp, and <1 hp pool pumps sold without an integrated basket strainer, would not meet the proposed definition of an ESCC or ESFM pump. Id.

Issue 2: DOE requests comment on whether the proposed definition of dedicated-purpose pool pumps, as detailed in the pumps test procedure NOPR, 80 FR at 17641 , should be modified – and if so, what changes should be made. One item of specific interest to DOE is whether the definition should explicitly account for the self-priming feature described above. DOE also seeks comment regarding how best to handle those pump models marketed as pool pumps but are not sold with a basket strainer.

Issue 3: DOE seeks information and data regarding the percentage of pool pump sales that involve models that are sold without integrated basket strainers.

2. Phase, Horsepower, and Application

The definition of dedicated-purpose pool pumps proposed in the pumps test procedure NOPR is not limited by operational parameters or characteristics. However, DOE may consider limiting the scope of any applicable dedicated-purpose pool pump regulations based on certain operating characteristics, including motor phase (single-versus multi-phase) and horsepower (hp) (THP or rated nameplate hp; minimum or maximum hp).

DOE’s review of regulatory and voluntary programs indicates that some programs include maximum and minimum hp limits, as well as phase limitations. For example, the

ENERGY STAR pool pump specification is only applicable to single-phase residential inground pool pumps that have a hp rating of between >0.5 and ≤ 4 THP. Aside from phase and THP limits, no other distinguishing characteristics have been identified.

DOE reviewed available product literature and found that dedicated-purpose pool pumps that meet the definition proposed in the pumps test procedure NOPR 80 FR 17586, 17641 (April 1, 2015) typically range from 0.5 to 5 hp, although DOE identified some pool pumps as large as 20 hp. DOE's research identified three-phase pool pumps as small as 2 hp and single-phase pool pumps as large as 10 hp. DOE notes that if this potential rulemaking establishes limitations on the phase and/or hp of dedicated-purpose pool pumps, a subset of pumps (i.e., self-priming pumps or pumps with integrated basket strainers) may ultimately not be covered by either the scope of this potential dedicated-purpose pool pump rulemaking or by the current energy conservation standards rulemaking currently underway. 80 FR 17826 (April 2, 2015)

Issue 4: DOE requests data on the breakdown of shipments of dedicated-purpose pool pumps by phase (single- or multi-) and by hp range. To the extent possible, DOE seeks annual shipments data broken down by phase and horsepower covering the last 15 years.

Issue 5: DOE requests comment on whether DOE should consider motor phase or hp limitations for dedicated-purpose pool pumps in the scope of any potential rulemaking. If so, why, and if not, why not?

Pools pumps can be classified either by the rated hp (also referred to as “nameplate hp”) or the THP (also known as “service factor hp”) of the motor with which the pump is sold. Rated hp refers to the output power of the motor, as stated by the manufacturer, at a specified rotational speed, voltage, and frequency. Alternatively, THP is a characterization of the maximum continuous load the motor is designed to serve at nominal rating conditions. THP can be calculated as a product of the rated hp and the service factor. The service factor is defined as a scalar quantity that indicates the percentage beyond the rated hp that a pump motor may continuously operate without exceeding its allowable insulation class temperature limit. (For example, a 5 hp motor rated with a service factor of 1.25 can safely operate at 6.25 hp without incurring heat-related damage.) When determining service factor, other operating parameters, such as rated voltage, frequency, and ambient temperature, must be within the normal operating range.

Issue 6: DOE requests comment on the merits of using either the rated hp or total horse power as the metric in creating potential exclusions or equipment classes.

3. Product Type

DOE identified several different pool pump types or classifications used by the industry. These include inground and aboveground pool pumps, inflatable pool pumps, auxiliary pumps, spa pumps, and several other types of pumps.

a) Inground and Aboveground Pool Pumps

Dedicated-purpose pool pumps serve both inground pools and aboveground pools. DOE research has indicated that for inground pools, dedicated-purpose pool pumps are required to be self-priming. As such, the industry appears to refer to self-priming pool pumps as “inground pool pumps” in their marketing literature. These “inground pool pumps” typically are designed to provide higher hydraulic heads²³ than the non-self-priming dedicated-purpose pool pumps designed for installation in aboveground pools. The higher heads provided by self-priming pumps are typically required because the “inground pool pumps” usually must overcome greater flow resistance (e.g., from longer piping or more piping bends) than those serving aboveground pools. However, DOE has found that some pool pumps listed as aboveground are also self-priming.

ENERGY STAR differentiates inground versus aboveground pools based on their application in residential swimming pools with dimensions as defined in American National Standards Institute (ANSI)/National Spa and Pool Institute (NSPI)-5 (ANSI/NSPI-5 2003), “Standard for Residential Inground Swimming Pools,” and ANSI/APSP-4 2007, “Standard for Aboveground/Onground Residential Swimming Pools,” respectively.

²³ “Hydraulic head” is a term used to describe the liquid pressure in a system and is typically measured in terms of the height of a column of the fluid above a reference plane that would result in an equivalent pressure.

The ENERGY STAR pool pumps framework²⁴ document lays out a scope limited to the residential inground pool pumps market because of the large end-user base and national savings potential present with this market, as well as the availability of adequate supporting test data. The absence of robust test data for aboveground pumps led the ENERGY STAR program to not issue specifications for these pumps. DOE notes that both inground and aboveground pool pumps would meet the definition of a dedicated-purpose pool pump, as proposed in the pumps test procedure NOPR. 80 FR at 17641.

Issue 7: DOE requests information on any performance or physical component differences between dedicated-purpose pool pumps designed to serve inground pools versus aboveground pools. Specifically, DOE requests comment on whether dedicated-purpose pool pumps serving inground pools need to be self-priming to operate as expected.

b) Inflatable Pool Pumps

DOE has identified a type of pump, sometimes classified as an inflatable pool pump, which is sold with an integrated filter system. The pump, motor, and basket strainer portion of these products appear to be similar to inground or aboveground pool pumps. This similarity in design indicates that the portion of the product not including the filter system may meet the current definition of a dedicated-purpose pool pump, as proposed in the pumps test procedure NOPR. 80 FR at 17641.

²⁴ “ENERGY STAR® Residential Swimming Pool Pump Specification Framework”, Available at http://www.energystar.gov/sites/default/files/specs//private/Pool_Pump_Specification_Framework.pdf

Issue 8: DOE requests data on the annual shipments of inflatable pool pumps or pumps with integrated filter systems for the last 15 years.

Issue 9: DOE requests comment on whether pumps with integrated filter systems should be part of a potential rulemaking for dedicated-purpose pool pumps. If so, why? If not, why not? If standards for this category of pumps should be included as part of any DOE effort to regulate dedicated-purpose pool pumps, should any potential standards be limited to the pump and motor portion only, or should it also include the filter system? Please include the reasons supporting (or opposing) your view.

Issue 10: DOE requests comment on how inflatable pool pumps or pumps with integrated filter systems are typically designed and distributed for sale. Specifically, DOE is interested in whether the pump, motor, and basket strainer portions of pumps sold with integrated filter systems are typically purchased from manufacturers as completed units. If not, do manufacturers of pumps with integrated filter systems design and produce the pump, motor, and basket strainer specifically for use in such systems, even though they may be distributed in commerce as separate components?

c) Auxiliary Pumps

DOE's research indicates that certain types of pumps are used to drive auxiliary pool equipment, such as pool cleaners, spas, and water features. In the industry, these pumps may be referred to as "specialty," "booster," or "auxiliary" pumps. The ENERGY

STAR pool pump specification defines auxiliary pumps as those pumps which are not used primarily for pool filtration and water recirculation.

Limited data are available on these types of pumps. A review of the market indicates that these pumps do not have an integrated basket strainer, and thus would not meet the definition of dedicated-purpose pool pump as proposed in the pumps test procedure NOPR. 80 FR at 17641. However, DOE's research suggests that most auxiliary pumps may be small ESCC pumps. As such, those that are 1 hp or greater would fall within the scope of DOE's recently proposed pumps test procedure. (80 FR 17586 (April 1, 2015)).

Issue 11: DOE requests comment on the annual shipments for the past 15 years of auxiliary pumps, broken-out by any commonly used equipment type designations, size (i.e. less than 1 hp and greater than or equal to 1 hp), and any other parameters relevant to the pool pump industry. DOE also requests data on typical usage profiles and energy use of auxiliary pumps used in pool applications.

Issue 12: DOE requests comment on how best to distinguish auxiliary pumps from other dedicated-purpose pool pumps intended for continuous use (i.e., the lack of an integrated basket strainer).

Issue 13: DOE requests comment on whether auxiliary pumps of less than 1 hp (or otherwise not meeting the definition of an ESCC pump as proposed in the pumps test

procedure NOPR, (80 FR 17586 (April 1, 2015)) should be included in the scope of any potential pool pump rulemaking. If so, why? If not, why not?

d) Spa Pumps

DOE notes that spa pumps are similar to auxiliary pumps in that they are small ESCC pumps without an integrated basket strainer. ENERGY STAR defines “residential spa pump” as a pump intended for installation in a non-permanently installed residential spa as defined in ANSI/NSPI-6 (ANSI/NSPI-6 1999), “Standard for Portable Spas.” ENERGY STAR also clarified that such pumps are sometimes referred to as a hot tub pump, but do not include jetted bathtub pumps.

Issue 14: DOE requests comment on the distinguishing characteristics of spa pumps (as opposed to dedicated-purpose pool pumps) and whether any categories of spa pumps should be included in the scope of any potential pool pump rulemaking.

e) Other Pumps

DOE’s research indicates that a type of pump commonly known as a “pool cover pump” is often classified by the industry as a pool pump. These pool cover pumps are typically submersible or sump pumps, and therefore they do not meet the definition of dedicated-purpose pool pump as proposed in the pumps test procedure NOPR. 80 FR at 17641.

DOE has also identified solar-powered and “bottom feeder” pool pumps available for sale. These pumps are typically very small (less than 1/4 hp) and are also submersible. These pumps would not meet the definition proposed in the pumps test procedure NOPR. 80 FR at 17641.

Issue 15: DOE requests information on the annual shipments for the past 15 years of pool cover pumps and solar-powered pool pumps, separately broken down by horsepower. DOE also requests comment on whether to include these pumps in any potential rulemaking to set energy conservation standards for dedicated-purpose pool pumps. If so, why? If not, why not?

Issue 16: DOE requests comment and any supporting information on any other categories of pool pumps that would be relevant to its efforts in examining potential energy conservation standards for dedicated-purpose pool pumps that are not already addressed in section II.B. 3.

4. Sales Configuration

Some types of pumps can be differentiated by the configuration in which the pump is sold, either as a bare pump, with a motor, or with a motor and controls.

In the pumps test procedure NOPR, DOE proposed to differentiate pumps considered in the scope of that rulemaking based on the configuration in which the pump is sold. These configurations include: the bare pump, the bare pump with an electric

motor, and the bare pump with an electric motor and continuous or non-continuous controls. 80 FR at 17627. The pumps test procedure NOPR proposed unique but comparable test methods and rating metrics that are applicable to a pump based on its sale configuration. Id. To achieve this differentiation, DOE proposed a series of definitions based on the CIP Working Group recommendations (Docket No. EERE-2013-BT-NOC-0039, No. 92 at p. 1):

- 1) “Pump” means equipment designed to move liquids (which may include entrained gases, free solids, and totally dissolved solids) by physical or mechanical action and includes a bare pump and, if included by the manufacturer at the time of sale, mechanical equipment, driver, and controls.
- 2) “Bare pump” means a pump excluding mechanical equipment, driver, and controls.
- 3) “Mechanical equipment” means any component that transfers energy from a driver to a bare pump.
- 4) “Driver” means the machine providing mechanical input to drive a bare pump directly or through the use of mechanical equipment. Examples include, but are not limited to, an electric motor, internal combustion engine, or gas/steam turbine.
- 5) “Control” means any device that can be used to operate the driver. Examples include, but are not limited to, continuous or non-continuous speed controls, schedule-based controls, on/off switches, and float switches.

80 FR 17586, 17641-42 (April 1, 2015).

DOE's research indicates that most dedicated-purpose pool pumps are paired with an electric motor when sold – rarely are they sold as bare pumps.

Issue 17: DOE requests information on whether dedicated-purpose pool pumps are offered for sale by pool pump manufacturers as bare pumps. If they are offered for sale as bare pumps, are they typically paired with a motor by a distributor or retailer before being sold to an end user? Related to this request, DOE seeks information regarding the percentage of dedicated-purpose pool pump shipments that are sold by the pump manufacturer as a bare pump, without a motor.

Dedicated-purpose pool pumps can also be sold with different types of controls that allow for the variation of motor speed at part load conditions. Specifically, dedicated-purpose pool pumps can be paired with multi-speed motors or variable-speed controls. The CEC established definitions of two-speed motors and variable-speed motors, while ENERGY STAR established definitions for multi-speed pumps, variable-speed pumps, and variable-flow pumps (flow controlled variable-speed pumps; see section II.A.2).

In the pumps test procedure NOPR, DOE proposed definitions of continuous controls and non-continuous controls to distinguish between controls with discrete speed options (e.g., two-speed and multi-speed controls) and controls that can continuously adjust speed in response to the required load (e.g., variable-speed drives):

- “Continuous Control” means a control that adjusts the speed of the pump driver continuously over the driver operating speed range in response to incremental changes in the required pump flow, head, or power output.
- “Non-Continuous Control” means a control that adjusts the speed of a driver to one of a discrete number of non-continuous preset operating speeds, and does not respond to incremental reductions in the required pump flow, head, or power output.

80 FR at 17641 (April 1, 2015).

These definitions may also be relevant to dedicated-purpose pool pumps.

Issue 18: DOE requests information on the market share of dedicated-purpose pool pumps sold with: (1) continuous controls, (2) non-continuous controls, and (3) other types of controls. DOE also seeks information on what other types of controls are applicable to pool pumps along with the market share held by each of these other controls..

C. Test Procedure and Rating Metrics

Related to considering potential energy conservation standards for dedicated-purpose pool pumps, DOE is also considering potential test procedures and rating metrics for dedicated-purpose pool pumps. Manufacturers of covered equipment use DOE test produces and rating metrics as the basis for (1) certifying to DOE that their equipment complies with any applicable energy conservation standards adopted under EPCA, (42

U.S.C. 6295(s) and 6316(a)(1)), and (2) making representations about the efficiency of that equipment. (42 U.S.C. 6314(d))

To inform DOE’s consideration of test procedures and rating metrics, DOE reviewed the pool pump test procedures that are established or referenced by the existing regulatory and voluntary programs that are discussed in section II.A. The rating metrics and testing requirements for each of these programs are summarized in Table .

Table II.3 Summary of Rating Metrics and Industry Test Procedures Referenced by Various Voluntary and Regulatory Pool Pump Programs

Rating Program	Metric	Test Procedure	Other Relevant Standards
CEC 2014 Appliance Efficiency Regulations	Prescriptive design requirements	IEEE Standard 114-2001 for determination of motor efficiency ANSI/Hi 1.6-2000 with additional rating requirements and calculations (equivalent to ANSI/APSP/ICC-15a-2013) for pump performance	N/A
ENERGY STAR Program Requirements for Pool Pumps - Version 1.0	EF	ANSI/Hi 1.6-2000 with additional rating requirements and calculations (equivalent to ANSI/APSP/ICC-15a-2013)	ANSI/APSP- 4 2007 ANSI/NSPI-5 - 2003 ANSI/NSPI-6 - 1999
CEE High-Efficiency Swimming Pool Initiative	EF and prescriptive design requirements for pool pump controls	ANSI/APSP/ICC-15a-2013	N/A
Australia and New Zealand Energy Rating Program	EF	Part 1 of AS 5102-2009	N/A

As discussed in section II.A.1, the CEC regulations established prescriptive design requirements for residential pool pumps that focused on the motor and controls

with which the pool pump is sold.²⁵ As such, the CEC requires that reported motor efficiency be verifiable by IEEE Standard 114-2001, “IEEE Standard Test Procedure for Single-Phase Induction Motors.”²⁶

Although the CEC does not currently regulate pool pumps on a performance basis, the regulations require reporting certain performance information when certifying a pool pump under the Title 20 regulations. Cal. Code Regs., tit. 20, § 1606, subd. (a)(3). For example, pool pump efficiency must be measured in accordance with the Hydraulic Institute’s (HI) Standard 1.6 (ANSI/HI 1.6 – 2000), “American National Standard for Centrifugal Pump Tests” and a manufacturer must report that its pool pump has been tested in accordance with this testing standard. Similarly, a manufacturer must test the performance of its pool pump along three representative system curves, known as curves A, B, and C. Cal. Code Regs., tit. 20, § 1604, subd. (g)(3). .

The test requirements for ENERGY STAR and CEE are harmonized with those adopted by the CEC.²⁷ The ENERGY STAR and CEE test methods for pool pumps reference the Association of Pool and Spa Professional’s (APSP) Standard 15 with Addendum 1 (ANSI/APSP/ICC-15a-2013), “American National Standard for Residential Swimming Pool and Spa Energy Efficiency.” ANSI/APSP/ICC-15a-2013 is based on the CEC test methodology.

²⁵ California Energy Commission, 2014 Appliance Efficiency Regulations, available at <http://www.energy.ca.gov/2014publications/CEC-400-2014-009/CEC-400-2014-009-CMF.pdf>

²⁶ Available for purchase at: <http://standards.ieee.org/findstds/standard/114-2001.html>

²⁷ The curves used by ENERGY STAR are identical to CEC curves A, B, and C.

The test requirements for the Australia and New Zealand energy rating program are defined in part 1 of AS 5102-2009, “Performance of household electrical appliances – Swimming pool pump –units: Energy consumption and energy performance.” Part 1 of the AS 5102-2009 test procedure is similar to the CEC testing requirements, but includes a different test setup and different measurement requirements. In addition, part 1 of AS 5102-2009 only requires rating along a new curve D.

In all of these test methods, the pump head is adjusted until the flow and head lie on the specified system curve. EF is then calculated at various rating points and speeds for multi- and variable-speed pumps as the ratio of flow over power, and is expressed in units of gal/Wh.

DOE recently proposed a test procedure for pumps that would incorporate by reference the Hydraulic Institute’s (HI) Standard 40.6-2014, “Methods for Rotodynamic Pump Efficiency Testing,” as the basis for establishing the tested performance of a bare pump, pump with motor, or pump with motor and controls. 80 FR at 17642. DOE’s proposed test procedure for pumps also includes additional calculations and default assumptions necessary to determine the constant load pump energy index (PEI_{CL}) for bare pumps and pumps sold with electric motors, or the variable load pump energy index (PEI_{VL}) for pumps sold with electric motors and continuous or non-continuous controls. 80 FR at 17643-17651. The PEI_{CL} and PEI_{VL} describe the power consumption of the rated pump, inclusive of a motor and any continuous or non-continuous controls, normalized with respect to the performance of a minimally compliant pump for each

pump basic model. DOE believes that such an approach could potentially be modified to be applicable to dedicated-purpose pool pumps.

Issue 18: DOE requests comment on the pros and cons of any of the rating metrics relevant to dedicated-purpose pool pumps, including EF, PEI_{CL}, and PEI_{VL}, or prescriptive design requirements for the motor and/or controls.

Issue 19: DOE requests comment on the applicability of any of the test procedures that might be applied to dedicated-purpose pool pumps, including the test procedure proposed by DOE for pumps in the pumps test procedure NOPR. If any particular provisions are not applicable, DOE requests comment on how they might be adapted to be more appropriate for the testing of dedicated-purpose pool pumps.

Issue 20: DOE requests comment on the burdens, if any, associated with testing dedicated-purpose pool pumps in accordance with any of the referenced industry test procedures.

Issue 21: DOE requests comment on any other pool pump test procedure that DOE should consider in developing a potential test procedure for dedicated-purpose pool pumps.

D. Data Needs for Rulemaking Analyses

To help inform DOE's decision of whether to regulate dedicated-purpose pool pumps, DOE seeks a variety of different types of information. If DOE chooses to regulate this equipment, the information collected in this RFI will also inform a number of analyses that are required to support an energy conservation standard rulemaking. Table I.1 provides a summary of these analyses. To this end, DOE seeks detailed data regarding the following aspects:

1. Market and Technology Assessment

Issue 22: DOE seeks data on historical shipments (specifically from 1995-2014, in number of units and revenues) for dedicated-purpose pool pumps. Where available, DOE requests this data be broken-out by equipment type, hp (rated nameplate hp or THP), operating speed, application, and any other parameters relevant to the pool pump industry.

Issue 23: The CEC maintains a database of pool pumps meeting the CEC's prescriptive design requirement standard.²⁸ DOE seeks comment on whether the range of product efficiencies (specified in EF) in the CEC database are representative of dedicated-purpose pool pumps in the United States. If not, DOE is interested in information regarding the typical range of efficiencies for dedicated-purpose pool pumps. If available, DOE requests these data be broken-out by equipment type, hp (rated

²⁸ Available at: www.appliances.energy.ca.gov/QuickSearch1024.aspx

nameplate hp or THP), operating speed, application, and any other parameters relevant to the pool pump industry.

Issue 24: DOE requests comment and information on design features that are typically used by the pool pump manufacturers to describe and differentiate pool pumps. This includes features used to differentiate various types of pool pumps from each other, as well as features used to differentiate dedicated-purpose pool pumps from the scope of pumps defined in the pumps test procedure NOPR. See 80 FR at 17642-17643. Additionally, DOE requests information on how these design features affect the efficiency of a dedicated-purpose pool pump.

Issue 25: DOE requests information and comment on technology options that could be considered to improve the energy efficiency of dedicated-purpose pool pumps. Specifically, DOE is interested in the magnitude of efficiency improvements available from any potential technology options, as well as how these efficiency improvements may, or may not, impact equipment performance, features, utility, or safety. Please provide efficiency improvements in terms of the relevant parameter, such as pump efficiency, motor efficiency, EF, etc.

Issue 26: DOE understands that there are two typical market channels for dedicated-purpose pool pumps, the distributor model (Manufacturer → Distributor → Pool Service Contractor → Customer) and the retail model (Manufacturer → Retail Store → Customer). DOE requests comment on whether these distribution channels sufficiently depicts the market channels for this equipment or if other channels, such as direct sales

through national accounts or wholesalers, exist that DOE should also consider. DOE requests data regarding the sizes of these market channels and requests data on the percentage of dedicated-purpose pool pumps sold through each channel, by type or application, if appropriate.

2. Energy Use Analysis

Issue 27: According to APSP²⁹, in 2013 there were approximately 8 million inground and aboveground swimming pools in the United States. DOE requests comment and information on the total number of installed inground and aboveground swimming pools in each state or climate region of the United States. DOE also requests comment on the number and type of dedicated-purpose pool pumps that are typically installed in each inground and aboveground swimming pool.

Issue 28: DOE seeks comment regarding the typical energy use of dedicated-purpose pool pumps. If available, DOE requests that these data be broken-out by equipment type, hp (rated nameplate hp or THP), operating speed, application, and any other parameters relevant to the pool pump industry.

Issue 29: A study by CEE³⁰ estimates that adopting higher efficiency technologies, such as multi-speed and variable-speed pool pumps, may result in energy

²⁹ The Association of Pool and Spa Professionals, "U.S. Swimming Pool and Hot Tub Market 2013". Available at: <http://apsp.org/portals/0/images/APSP%20statistics%202013.jpg>

³⁰ CEE High Efficiency Residential Swimming Pool Initiative, Consortium of Energy Efficiency. Available at http://library.cee1.org/sites/default/files/library/9986/cee_res_swimmingpoolinitiative_07dec2012_pdf_105

savings of 1,900–3,800 kWh/year for each residential swimming pool pump. DOE seeks comment on whether the approach and assumptions described in that report would be appropriate to use as a basis for estimating national energy savings, and on the accuracy of the estimates themselves. If so, why? If not, why not?

Issue 30: The pool pump industry defines “turnover rate” as the total number of times the entire volume of water in the pool is circulated (or “turned over”) within a 24-hour period. The industry defines “turnover time” as the amount of time required to circulate the entire volume of water in the pool once. Turnover rate is calculated by dividing 24 hours by the turnover time in hours. DOE seeks comment on typical turnover rates and times, as well as any variation by application, state, or climate region.

Issue 31: DOE seeks comment on the usage profiles of dedicated-purpose pool pumps broken-out by climate, pool or pump type (i.e., inground or aboveground, indoor or outdoor), hp (rated nameplate hp or THP), and efficiency. DOE is specifically interested in hours of use per day at each speed when multi-speed or variable-speed pumps are used.

Issue 32: DOE seeks data and comment on the number of months per year that dedicated-purpose pool pumps typically operate, broken-out by state or climate region.

Issue 33: DOE requests comment on the typical lifetime of dedicated-purpose pool pumps.

3. Manufacturer Impact Analysis

Issue 34: DOE seeks to identify all dedicated-purpose pool pump manufacturers that currently distribute equipment in the United States. Currently, DOE has identified Pentair Ltd., Hayward Industries, Inc., Zodiac, Speck Pumps, and Waterway Plastics as dedicated-purpose pool pump manufacturers. DOE seeks comment on the comprehensiveness of this list of manufacturers, and requests the names and contact information of any other domestically- or foreign-based manufacturers that sell or otherwise market their dedicated-purpose pool pumps in the United States.

Issue 35: DOE seeks to identify all dedicated-purpose pool pump manufacturers that currently distribute equipment in the United States who also qualify as small businesses. The Small Business Administration (SBA) defines a small business under North American Industry Classification System (NAICS) code 333911, “Pump and Pumping Equipment Manufacturing,” as one having no more than 500 employees.³¹ DOE requests the names of any small business manufacturers of dedicated-purpose pool pumps that it should consider in its analysis.

³¹ Size standards, listed by NAICS code and industry description and are available at <http://www.sba.gov/category/navigation-structure/contracting/contracting-officials/smallbusiness-size-standards>

III. Public Participation

DOE will accept comments, data, and information regarding this RFI and other matters relevant to DOE's consideration of any energy conservation standards for dedicated-purpose pool pumps by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. After the close of the comment period, DOE will begin collecting data, conducting the analyses, and reviewing the public comments. These actions will be taken to aid in the consideration of a rulemaking for dedicated-purpose pool pumps.

Instructions: All submissions received must include the agency name and docket number and/or RIN for this rulemaking. No telefacsimilies (faxes) will be accepted.

Docket: The docket is available for review at www.regulations.gov, including Federal Register notices, public meeting attendees' lists and transcripts, comments, and other supporting documents/materials. All documents in the docket are listed in the www.regulations.gov index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure.

A link to the docket webpage can be found at:

<http://www.regulations.gov/#!docketDetail;D=EERE-2015-BT-STD-0008>. This webpage contains a link to the docket for this notice on the www.regulations.gov website. The www.regulations.gov webpage contains simple instructions on how to access all documents, including public comments, in the docket.

For information on how to submit a comment, or review other public comments and the docket, contact Ms. Brenda Edwards at (202) 586-2945 or by e-mail: Brenda.Edwards@ee.doe.gov.

DOE considers public participation to be a very important part of the process for developing test procedures. DOE actively encourages the participation and interaction of the public during the comment period in each stage of the rulemaking process. Interactions with and between members of the public provide a balanced discussion of the issues and assist DOE in the rulemaking process. Anyone who wishes to be added to the DOE mailing list to receive future notices and information about this rulemaking should contact Ms. Brenda Edwards at (202) 586-2945, or via e-mail at Brenda.Edwards@ee.doe.gov.

Issued in Washington, DC, on April 24, 2015.

Kathleen Hogan
Deputy Assistant Secretary for Energy Efficiency
Energy Efficiency and Renewable Energy

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