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State of California
Office of Administrative Law

In re:
California Energy Commission

Regulatory Action:

Title 20, California Code of Regulations

Adopt sections:
Amend sections: 1601, 1602, 1604, 1605.1, 1605.2, 1605.3, 1606, 1607
Repeal sections:

NOTICE OF APPROVAL OF REGULATORY ACTION

Government Code Section 11349.3

OAL Matter Number: 2020-0806-01

OAL Matter Type: Regular (S)

In this rulemaking action, the Commission amends its regulations to establish standards and test procedures for dedicated-purpose pool pumps (DPPP) and replacement dedicated-purpose pool pump motors (RDPPPM).

OAL approves this regulatory action pursuant to section 11349.3 of the Government Code. This regulatory action becomes effective on 1/1/2021.

Date: September 21, 2020

Thanh Huynh
Senior Attorney

For: Kenneth J. Pogue
Director

Original: Drew Bohan, Executive Director
Copy: Corrine Fishman

Proposed Regulatory Language

California Code of Regulations
Title 20. Public Utilities and Energy
Division 2. State Energy Resources Conservation and Development Commission
Chapter 4. Energy Conservation
Article 4. Appliance Efficiency Regulations
Sections 1601 – 1609
As related to Dedicated-Purpose Pool Pumps and Replacement Dedicated-Purpose Pool Pump Motors

February 21, 2020

The proposed changes to the Title 20 regulations are provided below. Changes to the regulations are marked with underlining (new language) and ~~strikethroughs~~ (deletions). Three dots or "…" represents the substance of the existing regulations that will remain unchanged between the sections containing proposed language changes.

Section 1601. Scope.

…[skipping first paragraph through (f)]

(g) Pool heaters~~,~~; portable electric spas; residential pool pump and motor combinations, and replacement residential pool pump motors~~,~~; and pumps, dedicated-purpose pool pumps, and replacement dedicated-purpose pool pump motors ~~portable electric spas, and pumps~~.

…[skipping the rest of section 1601]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and sections 16, 26, and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c), 25402.5.4, and 25960, Public Resources Code; and section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Section 1602. Definitions.

…[skipping (a) through (f)]

(g) Pool Heaters~~,~~; Portable Electric Spas~~,~~; ~~Pumps,~~ Residential Pool Pump and Motor Combinations, and Replacement Residential Pool Pump Motors; and Pumps, Dedicated-Purpose Pool Pumps, and Replacement Dedicated-Purpose Pool Pump Motors.

…[skipping (g)(1) through (g)(2)]

(3) Residential Pool Pump and Motor Combinations and Replacement Residential Pool Pump Motors Definitions. The following definitions apply to products manufactured before July 19, 2021.

...[skipping "Capacitor start-capacitor run" through "Pool pump motor capacity"]

"Replacement residential pool pump motor" means a replacement motor marketed by a manufacturer ~~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.

...[skipping "Residential pool pump" through rest of (g)(3)]

(4) **Pumps, Dedicated-Purpose Pool Pumps, and Replacement Dedicated-Purpose Pool Pump Motors Definitions.**

...[skipping 'Bare pump"]

"Basket strainer" means a perforated or otherwise porous receptacle, mounted within a housing on the suction side of a pump that prevents solid debris from entering a pump. The basket strainer receptacle is capable of passing spherical solids of 1 millimeter (mm) in diameter and can be removed by hand or using only simple tools such as a screwdriver, pliers, or an open-ended wrench.

...[skipping "Basic model" through "Control"]

"Dedicated-purpose pool pump" comprises self-priming pool filter pumps, non-self-priming pool filter pumps, waterfall pumps, pressure cleaner booster pumps, integral sand-filter pool pumps, integral-cartridge filter pool pumps, storable electric spa pumps, and rigid electric spa pumps.

"Dedicated-purpose pool pump motor total horsepower" means the product of the dedicated-purpose pool pump nominal motor horsepower and the dedicated-purpose pool pump service factor of a motor used on a dedicated-purpose pool pump based on the maximum continuous duty motor power output rating allowable for the motor's nameplate ambient rating and insulation class.

"Dedicated-purpose pool pump service factor" means a multiplier applied to the rated horsepower of a pump motor to indicate the percent above nameplate horsepower at which the motor can operate continuously without exceeding its allowable insulation class temperature limit.

"Designed and marketed" means that the equipment is designed to fulfill the indicated application and, when distributed in commerce, is designated and marketed for that application, with the designation on the packaging or any publicly available documents such as product literature, catalogs, and packaging labels.

...[skipping "Driver" through "Fire pump"]

"Freeze protection control" means a pool pump or replacement motor control that, at a certain ambient temperature, turns on the dedicated-purpose pool pump or replacement motor to circulate water for a period of time to prevent the pool and water in plumbing from freezing.

...[skipping "Full impellor diameter" through "In-line (IL) pump"]

"Integral" means a part of the device that cannot be removed without compromising the device's function or destroying the physical integrity of the unit.

"Integral cartridge-filter pool pump" means a pump that requires a removable cartridge filter, installed on the suction side of the pump, for operation, and the cartridge filter cannot be bypassed.

"Integral sand-filter pool pump" means a pump distributed in commerce with a sand filter that cannot be bypassed.

...[skipping Magnet-driven pump"]

"Maximum operating speed" means the rated full-load speed of a motor powered by a 60 Hertz (Hz) alternating current (AC) source. Speed is expressed in revolutions per minute (RPM).

...[skipping Mechanical equipment through "Mechanically-coupled pump"]

"Multi-speed dedicated-purpose pool pump" means a dedicated-purpose pool pump that is capable of operating at more than two discrete, pre-determined operating speeds separated by speed increments greater than 100 revolutions per minute (RPM), where the lowest speed is less than or equal to half of the maximum operating speed and greater than zero, and must be distributed in commerce with an on-board pool pump control (i.e., variable speed drive and user interface or programmable switch) that changes the speed in response to pre-programmed user preferences and allows the user to select the duration of each speed or the operational times or both.

...[skipping "Non-continuous control]

"Non-self-priming pool filter pump" means a pool filter pump that is not certified under NSF/ANSI 50–2015, "Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities", to be self-priming and is not capable of re-priming to a vertical lift of at least 5.0 feet with a true priming time less than or equal to 10.0 minutes, when tested in accordance with section 1604(g)(4)(B) of this Article, and is not a waterfall pump.

...[skipping "PEI_{CL}" through "PEI_{VL}"]

"Pool filter pump" means an end suction pump that:

(A) either:

1. includes an integrated basket strainer; or

2. does not include an integrated basket strainer, but requires a basket strainer for operation, as stated in manufacturer literature provided with the pump; and

(B) may be distributed in commerce connected to, or packaged with, a sand filter, removable cartridge filter, or other filtration accessory, provided that the filtration accessory is connected with consumer-removable connections that allow the filtration accessory to be bypassed.

"Pool pump timer" means a pool pump control that automatically turns off a dedicated-purpose pool pump after a run-time of no longer than 10 hours.

"Pressure cleaner booster pump" means an end suction dry rotor pump designed and marketed for pressure-side pool cleaner applications, and which may be UL listed under UL 1081-2016,

...[skipping Prime-assist pump" through "Radially split, multi-stage, vertical, in-line diffuser casing (RSV) pump"]

"Removable cartridge filter" means a filter component with fixed dimensions that captures and removes suspended particles from water flowing through the unit. The removable cartridge filter is not capable of passing spherical solids of 1 mm in diameter or greater, and can be removed from the filter housing by hand or using only a simple tool such as a screwdriver, plier, or open-ended wrench.

"Replacement dedicated-purpose pool pump motor" means an electric motor that:

(A) is single-phase or polyphase;

(B) has a dedicated purpose pool pump motor total horsepower of less than or equal to 5 horsepower;

(C) is marketed for use as a replacement motor in self-priming pool filter pump, non-self-priming pool filter pump, or pressure cleaner booster pump applications; and

(D) excludes polyphase replacement dedicated-purpose pool pump motors capable of operating without a drive, and is sold or offered for sale without a drive that converts single-phase power to polyphase power.

"Rigid electric spa pump" means an end suction pump that does not contain an integrated basket strainer or require a basket strainer for operation as stated in manufacturer literature provided with the pump and that meets the following three criteria:

(A) is assembled with four through bolts that hold the motor rear endplate, rear bearing, rotor, front bearing, front endplate, and the bare pump together as an integral unit;

(B) is constructed with buttress threads at the inlet and discharge of the bare pump; and

(C) uses a casing or volute and connections constructed of a non-metallic material.

...[skipping "Rotodynamic pump"]

"Sand filter" means a device designed to filter water through sand or an alternate sand-type media.

"Self-priming pool filter pump" means a pool filter pump that is certified under NSF/ANSI 50-2015, to be self-priming or is capable of re-priming to a vertical lift of at least 5.0 feet with a true priming time less than or equal to 10.0 minutes, when tested with section 1604(g)(4)(B) of this Article, and is not a waterfall pump.

...[skipping "Self-priming pump" through "Single axis flow pump"]

"Single-speed dedicated-purpose pool pump" means a dedicated-purpose pool pump that is capable of operating at only one speed.

"Storable electric spa pump" means a pump that is distributed in commerce with the following:

(A) an integral heater; and

(B) an integral air pump.

"Submersible pump" means a pump that is designed to be operated with the motor and bare pump fully submerged in the pumped liquid.

...[skipping "Submersible turbine (ST) pump through "Twin head pump"]

"Two-speed dedicated-purpose pool pump" means a dedicated-purpose pool pump that is capable of operating at only two different pre-determined operating speeds, where the low operating speed is less than or equal to half of the maximum operating speed and greater than zero, and is distributed in commerce either:

(A) with a pool pump control (e.g., variable speed drive and user interface or switch) that is capable of changing the speed in response to user preferences; or

(B) without a pool pump control that has the capability to change speed in response to user preferences, but is unable to operate without the presence of such a pool pump control.

"Variable-speed dedicated-purpose pool pump" means a dedicated-purpose pool pump that is capable of operating at a variety of user-determined speeds, where all the speeds are separated by at most 100 revolutions per minute (RPM) increments over the operating range and the lowest operating speed is less than or equal to one-third of the maximum operating speed and is greater than zero. Such a pump must include a variable speed drive and be distributed in commerce either:

(A) with a user interface that changes the speed in response to pre-programmed user preferences and allows the user to select the duration of each speed and/or the on and off times; or

(B) without a user interface that changes the speed in response to pre-programmed user preferences and allows the user to select the duration of each speed and/or the on and off times, but is unable to operate without the presence of a user interface.

"Variable speed drive" means equipment capable of varying the speed of the motor.

"Variable-speed replacement dedicated-purpose pool pump motor" means a replacement dedicated-purpose pool pump motor that is capable of operating at a variety of user-determined speeds, where all the speeds are separated by at most 100 revolutions per minute (RPM) increments over the operating range and the lowest operating speed is less than or equal to one-third of the maximum operating speed and is greater than zero. Such a motor must include a variable-speed drive and be sold or offered for sale either:

(A) with a user interface that changes the speed in response to preprogrammed user preferences and allows the user to select the duration of each speed, the operational times, or both; or

(B) without a user interface that changes the speed in response to preprogrammed user preferences and allows the user to select the duration of each speed, the operational times, or both, but is unable to operate without the presence of such a user interface.

"Waterfall pump" means a pool filter pump with a certified maximum head less than or equal to 30.0 feet, and a maximum speed less than or equal to 1,800 revolutions per minute (RPM).

...[skipping (h) through (x)]

The following documents are incorporated by reference in section 1602.

...[skipping FEDERAL STATUTES AND REGULATIONS through NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION (NEMA)]

NSF INTERNATIONAL

NSF/ANSI 50-2015	Equipment for Swimming Pools, Spas, Hot Tubs and Other Recreational Water Facilities

...[skipping NSF/ANSI 51-2007 through SOCIETY OF MOTION PICTURE AND TELEVISION ENGINEERS (SMPTE)]

UNDERWRITERS LABS (UL)

...[skipping ANSI/UL 448-2013 through UL 588]

UL 1081-2016 (October 21, 2016)	Standard for Swimming Pool Pumps, Filters, and Chlorinators.

...[skipping the rest of section 1602]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26 and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c), 25402.5.4, and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Section 1602.1. Rule of Construction.

(No Change)

...[skipping the rest of section 1602.1]

Section 1603. Testing: All Appliances.

(No Change)

...[skipping the rest of section 1603]

Section 1604. Test Methods for Specific Appliances.

...[skipping (a) through (f)]

(g) Pool Heaters~~,~~; Portable Electric Spas~~,~~; ~~Pumps,~~ Residential Pool Pump and Motor Combinations, and Replacement Residential Pool Pump Motors; and Pumps, Dedicated-Purpose Pool Pumps, and Replacement Dedicated-Purpose Pool Pump Motors.

...[skipping (g)(1) through (g)(2)]

~~(3) Test Method for Residential Pool Pumps~~

~~The test method for residential pool pumps is as follows:~~

~~(A) Reported motor efficiency shall be verifiable by test method IEEE 114-2001.~~

~~(B) ANSI/HI 1.6-2000 shall be used for the measurement of pump efficiency.~~

~~(C) Three curves shall be calculated:~~

~~Curve A: H = 0.0167 x F^2~~

~~Curve B: H = 0.050 x F^2~~

~~Curve C: H = 0.0082 x F2~~

~~Where:~~

~~H is the total system head in feet of water.~~

~~F is the flow rate in gallons per minute (gpm).~~

~~(D) For each curve (A, B, or C), the pump head shall be adjusted until the flow and head lie on the curve. The following shall be tested and reported (i) for each curve for single-speed pumps or (ii) for each curve at both highest and lowest speeds for two-, multi-, or variable-speed pumps:~~

~~1. Motor nominal speed (RPM)~~

~~2. Flow (gallons per minute)~~

~~3. Power (watts and volt amps)~~

~~4. Energy Factor (gallons per watt hour)~~

~~Where the Energy Factor (EF) is calculated as:~~

~~EF = Flow (gpm) * 60 / Power (watts)~~

(43) **Test Methods for Pumps, Dedicated-Purpose Pool Pumps, and Replacement Dedicated-Purpose Pool Pump Motors.**

(A) The test method for pumps, except for dedicated-purpose pool pumps, is 10 C.F.R. section 431.464(a) (Appendix A to subpart Y of part 431).

(B) The test method for dedicated-purpose pool pumps manufactured on or after July 19, 2021 and served by single-phase or polyphase input power, is 10 C.F.R. 431.464(b) (Appendix C to subpart Y of part 431).

(C) A replacement dedicated-purpose pool pump motor manufactured on or after July 19, 2021, shall be tested in accordance with CSA-C747-09 (Reaffirmed 2014), "Energy Efficiency Test Methods for Small Motors" at full load and maximum operating speed. If a drive is sold or offered for sale with the replacement dedicated-purpose pool pump motor, the input power of the drive while the drive is connected to the motor shall be used to determine nominal efficiency and power factor per the test procedure.

1. Motor torque shall be recorded in lb-ft, motor speed in rotations per minute, and input power shall be recorded in watts.

2. Power factor shall be calculated as:

Single phase motors:
Power Factor (%) = 100 x Input Power (W)/(Voltage(V) x Amps (A))
Three phase motors:
Power Factor (%) = 100 x Input Power (W)/(Voltage(V) x Amps(A) x 1.73)
where Voltage and Amps are the measured root mean square (rms) voltage and current.

...[skipping (h) through (x)]

The following documents are incorporated by reference in section 1604.

...[skipping CALIFORNIA ENERGY COMMISSION TEST METHODS]

FEDERAL TEST METHODS

...[skipping C.F.R., Title 10, section 429.56, 429.63, and 429.70 through C.F.R., Title 10, sections 431.443, 431.444, and 431.445]

C.F.R., Title 10, section 431.464(a) Appendix A to Subpart Y of 10 C.F.R., § 431

C.F.R., Title 10, section 431.464(b), Appendix C to Subpart Y of 10 C.F.R., § 431

...[skipping C.F.R., Title 10, section 431 subpart G through THE ASSOCIATION OF POOL AND SPA PROFESSIONALS (APSP)]

CANADIAN STANDARDS ASSOCIATION (CSA)

...[skipping CSA B45.1-2013]

CSA C747-09(reaffirmed 2014) Energy efficiency test methods for small motors

...[skipping rest of 1604]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26 and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015). Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Section 1605. Energy Performance, Energy Design, Water Performance, and Water Design Standards: In General.

(No Change)

Section 1605.1. Federal and State Standards for Federally Regulated Appliances.

...[skipping (a) through (f)]

(g) Pool Heaters;; Portable Electric Spas;; ~~Pumps,~~ Residential Pool Pump and Motor Combinations, and Replacement Residential Pool Pump Motors; and Pumps, Dedicated-Purpose Pool Pumps, and Replacement Dedicated-Purpose Pool Pump Motors.

...[skipping (g)(1) through (g)(5)]

(6) **Energy Efficiency Standards for Pumps.**

(A) For the purposes of section 1605.1(g)(6)(B) of this Article, "PEI_{CL}" means the constant load pump energy index and "PEI_{VL}" means the variable load pump energy index, both as determined in accordance with the test procedure in section 1604(g)(~~4~~3)(A) of this Article. For the purposes of section 1605.1(g)(6)(~~C~~D) of this Article, "BEP" means the best efficiency point as determined in accordance with the test procedure in section 1604(g)(~~4~~3)(A) of this Article.

...[skipping (g)(6)(B)]

(7) Energy Efficiency Standards for Dedicated-Purpose Pool Pumps.

(A) For the purposes of 1605.1(g)(7)(B) of this Article, "WEF" means the weighted energy factor and "hhp" means the rated hydraulic horsepower, as determined in accordance with the test procedure in section 1604(g)(4)(B) of this Article and applicable sampling plans in 10 C.F.R. section 429.59.

(B) Each dedicated-purpose pool pump that is not a submersible pump and is manufactured on or after July 19, 2021, shall have a WEF rating that is not less than the value calculated from Table G-3 in section 1605.1(g)(7)(B) of this Article:

Table G-3: Standards for Dedicated-Purpose Pool Pumps Manufactured on or After July 19, 2021

Equipment class			Minimum allowable WEF score [kgal/kWh]
Dedicated-purpose pool pump variety	hhp Applicability	Motor phase	
Self-priming pool filter pumps	0.711 hp ≤hhp <2.5 hp	Single	WEF = −2.30 * ln (hhp) + 6.59.
Self-priming pool filter pumps	hhp <0.711 hp	Single	WEF = 5.55, for hhp ≤0.13 hp −1.30 * ln (hhp) + 2.90, for hhp >0.13 hp.
Non-self-priming pool filter pumps	hhp <2.5 hp	Any	WEF = 4.60, for hhp ≤0.13 hp −0.85 * ln (hhp) + 2.87, for hhp >0.13 hp.
Pressure cleaner booster pumps	Any	Any	WEF = 0.42.

(C) Each integral cartridge-filter pool pump and integral sand-filter pool pump that is manufactured on or after July 19, 2021, shall be distributed in commerce with a pool pump timer that is either integral to the pump or a separate component that is shipped with the pump.

(D) For all dedicated-purpose pool pumps manufactured on or after July 19, 2021, with freeze protection controls, the pump shall be shipped with freeze protection disabled or with all of the following default, user-adjustable settings:

1. the default dry-bulb air temperature setting shall be no greater than 40 °F;

2. the default run time setting shall be no greater than 1 hour (before the temperature is rechecked); and

3. the default motor speed shall not be more than one half of the maximum available speed.

(E) Waterfall pumps. There is no energy efficiency standard for waterfall pumps. See 1605.1(g)(7)(D) of this Article for energy design standards for waterfall pumps with freeze protection controls.

(~~7~~8) **Energy Efficiency Standards and Energy Design Standards for Residential Pool Pump and Motor Combinations, Replacement Dedicated-Purpose Pool Pump Motors, and Replacement Residential Pool Pump Motors.** See section 1605.3(g) of this Article for

energy efficiency standards and energy design standards for residential pool pump and motor combinations, replacement dedicated-purpose pool pump motors, and replacement residential pool pump motors.

...[skipping the rest of section 1605.1]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26, and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Section 1605.2. State Standards for Federally Regulated Appliances.

...[skipping (a) through (f)]

(g) Pool Heaters, Portable Electric Spas, ~~Pumps,~~ Residential Pool Pump and Motor Combinations, and Replacement Residential Pool Pump Motors; and Pumps, Dedicated-Purpose Pool Pumps, and Replacement Dedicated-Purpose Pool Pump Motors.

...[skipping (g)(1)]

(2) **Portable Electric Spas, Residential Pool Pump and Motor Combinations, Replacement Dedicated-Purpose Pool Pump Motors, and Replacement Residential Pool Pump Motors.** See section 1605.3(g) of this Article for energy efficiency standards and energy design standards for portable electric spas, residential pool pump and motor combinations, replacement dedicated-purpose pool pump motors, and replacement residential pool pump motors.

...[skipping (g)(3)]

(4) **Dedicated-Purpose Pool Pumps.** See section 1605.1(g)(7) of this Article for energy efficiency standards for federally regulated dedicated-purpose pool pumps that are manufactured on or after July 19, 2021.

...[skipping the rest of section 1605.2]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26, and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Section 1605.3. State Standards for Non-Federally Regulated Appliances.

...[skipping (a) through (f)]

(g) Pool Heaters;; Portable Electric Spas;; ~~Pumps~~, Residential Pool Pump and Motor Combinations, and Replacement Residential Pool Pump Motors; and Pumps, Dedicated-Purpose Pool Pumps, and Replacement Dedicated-Purpose Pool Pump Motors.

...[skipping (g)(1) through (g)(5)(B)]

(6) Replacement Dedicated-Purpose Pool Pump Motors.

(A) All replacement dedicated-purpose pool pump motors manufactured on or after July 19, 2021, shall meet a nominal efficiency at full-load and maximum operating speed of no less than the value shown in Table G-4.

Table G-4: Standards for Replacement Dedicated-Purpose Pool Pump Motors Manufactured on or After July 19, 2021

Dedicated-purpose pool pump motor total horsepower	Motor Phase	Nominal Efficiency at Full-Load and Maximum Operating Speed
Motor hp < 0.5 hp	Any	66%
0.5 hp ≤ Motor hp<1.0 hp	Any	72%
1.0 hp ≤ Motor hp ≤5.0 hp	Any	80%

(B) Replacement dedicated-purpose pool pump motors with a dedicated-purpose pool pump motor total horsepower greater than or equal to 0.5 hp manufactured on or after July 19, 2021, shall be variable-speed replacement dedicated-purpose pool pump motors.

(C) Freeze Protection. All replacement dedicated-purpose pool pump motors manufactured on or after July 19, 2021 with freeze protection controls, shall be shipped with freeze protection disabled or with all of the following default, user-adjustable settings:

1. the default dry-bulb air temperature setting shall not be greater than 40° Fahrenheit (F);

2. the default run time setting shall be no greater than 1 hour (before the temperature is rechecked); and

3. the default motor speed shall not be more than one half of the maximum operating speed of the motor.

(D) Replacement Dedicated-Purpose Pool Pump Motor Drive. A pool pump motor drive manufactured on or after July 19, 2021, that is sold with a variable-speed replacement dedicated-purpose pool pump motor shall have the default speed setting of the control set at no more than 55 percent of the maximum operating speed of the motor. Any high-speed override capability shall be for a temporary

period not to exceed one 24-hour cycle before automatically resetting to default settings.

(6~~7~~) **Portable Electric Spas.**

...[skipping (g)(7)(A)]

(B) The normalized standby power, as defined in Table G-~~3~~5, of portable electric spas manufactured on or after June 1, 2019, shall be no greater than the applicable values shown in Table G-~~3~~5.

Table G-~~3~~5 Standards for Portable Electric Spas

...[skipping Table G-5]

(8) Dedicated-Purpose Pool Pumps. See section 1605.1(g)(7) of this Article for standards for dedicated-purpose pool pumps that are federally regulated

...[skipping the rest of section 1605.3]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26 and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Section 1606. Filing by Manufacturers; Listing of Appliances in Database.

(a) Filing of Statements.

...[skipping first paragraph through (a)(2)]

(3) Testing and Performance Information.

(A) A statement that the appliance has been tested in accordance with all applicable requirements of sections 1603 and 1604 of this Article. If section 1604 of this Article provides more than one test method that may be used, the manufacturer shall identify which method was used.

...[skipping Exception 1]

EXCEPTION 2. to Section 1606(a)(3)(A) of this Article:

For integral cartridge-filter pool pumps and integral sand-filter pool pumps manufactured on or after July 19, 2021, in lieu of the statement required in section 1606(a)(3)(A) of this Article, a statement that the appliance meets the energy design requirements of sections 1605.1(g)(7)(C) and 1605.1(g)(7)(D) of this Article.

EXCEPTION 3 to section 1606(a)(3)(A) of this Article:

For residential pool pump and motor combinations and residential replacement pool pump motors, in lieu of the statement required in section 1606(a)(3)(A) of this Article, a statement

that the appliance meets the design requirements of section 1605.3(g)(5)(A) and 1605.3(g)(5)(B) of this Article.

...[skipping (a)(3)(B) through Table X, Section G "Pumps (data collection required for models manufactured on or after January 27, 2020 only)"]

Table X
Data Submittal Requirements

...

	Appliance	Required Information	Permissible Answers
G	Residential Pool Pump and Motor Combinations	~~Motor Construction~~	~~PSC, Capacitor Start-Capacitor Run, ECM, Capacitor Start-induction run, split-phase Permanent Magnet Synchronous~~
	and Replacement Residential Pool Pump Motors manufactured before July 19, 2021	Motor Construction is Split-Phase	True, False
		Motor Construction is Capacitor Start-Induction Run	True, False
		Motor Design	Single-speed, dual-speed, multi-speed, variable-speed
		~~Frame~~	
		~~Speed (in RPM)~~	
		Motor has Capability of Operating at Two or More Speeds with the Low Speed having a Rotation Rate that is No More than One-Half of the Motor's Maximum Rotation Rate	True, False
		Unit Type	Residential Pool Pump and Motor Combination, Replacement Residential Pool Pump Motor
		Pool Pump Motor Capacity	
		Motor Service Factor	

	Appliance	Required Information	Permissible Answers
		~~Motor Efficiency (%)~~	
		Nameplate Horsepower	
		Pump Control Speed (compliance with section 1605.3(g)(5)(B)2. of this Article)	True, False
		~~Flow for Curve 'A' (in gpm)~~	
		~~Power for Curve 'A' (in watts)~~	
		~~Energy Factor for Curve 'A' (in gallons per watt-hour)~~	
		~~Flow for Curve 'B' (in gpm)~~	
		~~Power for Curve 'B' (in watts)~~	
		~~Energy Factor for Curve 'B' (in gallons per watt-hour)~~	
		~~Flow for Curve 'C' (in gpm)~~	
		~~Power for Curve 'C' (in watts)~~	
		~~Energy Factor for Curve 'C' (in gallons per watt-hour)~~	
	Dedicated-Purpose Pool Pumps manufactured on or after July 19, 2021	Dedicated-purpose pool pump product group	Self-priming pool filter pumps with rated hydraulic horsepower of 0.711 hp <= hhp < 2.5 hp, Self-priming pool filter pumps with rated hydraulic horsepower of hhp < 0.711 hp, Non-self-priming pool filter pumps, Pressure cleaner booster pumps, Integral cartridge-filter pool pumps, Integral sand-filter pool pumps, Waterfall pumps
		Freeze Protection Controls when Shipped	Enabled, Disabled, Not applicable
		Default Dry-Bulb Air Temperature Setting (in degrees F) (when "Freeze Protection Controls when Shipped" = Enabled)	
		Default Run-Time Setting (in minutes) (when "Freeze Protection Controls when Shipped" = Enabled)	

	Appliance	Required Information	Permissible Answers
		Default Motor Speed (in rpm) (when "Freeze Protection Controls when Shipped" = Enabled)	
		Default Motor Speed is More than 1/2 of the Maximum Available Speed (when "Freeze Protection Controls when Shipped" = Enabled)	True, False
	Self-Priming Pool Filter pumps, Non-Self-Priming Pool Filter Pumps, Pressure Cleaner Booster pumps or Waterfall Pumps	Weighted Energy Factor (WEF) in kilogallons per kilowatt-hour (kgal/kWh)	
		Rated Hydraulic Horsepower in horsepower (hp)	
		Speed Configuration for which the pump is being rated	Single-speed, Two-speed, Multi speed, or Variable-speed
		True Power Factor at High Load Point	
		Dedicated-Purpose Pool Pump Nominal Motor Horsepower	
		Dedicated-Purpose Pool Pump Motor Total Horsepower	
		Dedicated-Purpose Pool Pump Service Factor	
		Input Power at the High Flow Load Point (watts)	
		Flow Rate at the High Flow Load Point (gpm)	
		Speed at the High Flow Load Point (rpm)	
	Self-priming pool filter pumps, Non-self-priming pool filter pumps or Pressure cleaner booster pumps	Input Power at Maximum Rotating Speed (watts)	
		Flow Rate at Maximum Rotating Speed (gpm)	
		Speed at Maximum Rotating Speed (rpm)	

	Appliance	Required Information	Permissible Answers
	Self-priming pool filter pumps or Non-self-priming pool filter pumps	True Power Factor at Low Load Point	
		Pump Certified with NSF/ANSI 50-2015	True, False
		Vertical Lift (in feet) (when "Pump Certified with NSF/ANSI 50-2015" = False)	
		True Priming Time (in minutes) (when "Pump Certified with NSF/ANSI 50-2015" = False)	
		Input Power at the Low Flow Load Point (watts)	
		Flow Rate at the Low Flow Load Point (gpm)	
		Speed at the Low Flow Load Point (rpm)	
	Self-priming pool filter pumps, Non-self-priming pool filter pumps, or Waterfall Pumps	Maximum Head (in feet)	
	Integral cartridge-filter pool pumps or Integral sand-filter pool pumps	Pool pump control is either integral to the pump or a separate component that is sold or offered for sale with the pump	True, False
		Maximum Run-Time (in hours) of the Pool Pump Control	
	Replacement Dedicated-Purpose Pool Pump Motors manufactured on or after July 19, 2021	Replacement Dedicated-Purpose Pool Pump Motor is a Variable-speed replacement dedicated-purpose pool pump motor	True, False
		Dedicated-purpose pool pump motor total horsepower (hp)	
		Nominal efficiency at full-load and maximum operating speed (%)	

	Appliance	Required Information	Permissible Answers
		Motor speed at full-load and maximum operating speed (rpm)	
		Motor torque at full-load and maximum operating speed (lb-ft)	
		Input power at full-load and maximum operating speed (watts)	
		Power factor at full-load and maximum operating speed (%)	
		Motor phase	Single-phase, polyphase
		Sold with motor drive	True, False
		Meets requirements of 1605.3(g)(6)(D) (when "Sold with motor drive" = True)	True, False
		Freeze protection controls is shipped enabled	Enabled, Disabled, Not applicable
		Default dry bulb air temperature setting (°F) (when "Freeze protection controls are shipped enabled")	
		Default motor speed (rpm) (when "Freeze protection controls are shipped enabled")	
		Default run time (minutes) (when "Freeze protection controls are shipped enabled")	
		Is the default motor speed more than 1/2 of the maximum available speed? (when "Freeze protection controls are shipped enabled")	True, False

[skipping remainder of Table X]

(4) Declaration.

(A) Each statement shall include a declaration, executed under penalty of perjury of the laws of California, that

...[skipping (a)(4)(A)1. through (a)(4)(A)4.]

5. all units of the appliance are marked as required by section 1607 of this Article, and, for the following appliances, are marked as follows:

...[skipping (a)(4)(A)5.a. through (a)(4)(A)5.f.]

g. for residential pool pumps, each pool pump is marked permanently and legibly on an accessible and conspicuous place on the unit, in characters no less than 1/4 inch~~", with the nameplate HP of the pump and,~~ if manufactured on or after January 1, 2010, with the statement, "This pump must be installed with a two-, multi-, or variable-speed pump motor controller";

...[skipping (a)(4)(A)5.h.]

i. each replacement dedicated-purpose pool pump motor is marked in accordance with subdivision 1607(d)(16) of this Article.

...[skipping the rest of section 1606]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26 and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c), 25402.5.4 and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Section 1607 Marking of Appliances.

...[skipping (a) through (c)]

(d) Energy Performance Information.

...[skipping (d)(1)]

(2) Federally Regulated Commercial and Industrial Equipment.

...[skipping paragraph]