

DOCKETED

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APSP Pool Pump & Motor Comment

Additional submitted attachment is included below.



The Association of
Pool & Spa Professionals®

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August 12, 2016

California Energy Commission
Docket No. 15-AAER-02
1516 9th Street, MS-4
Sacramento, CA 95814

To Whom It May Concern:

The Association of Pool and Spa Professionals (APSP) appreciates the opportunity to review and comment on the **Revised Analysis of Efficiency Standards for Pool Pumps and Motors and Spas** (Analysis) published on June 16, 2016 with regard to Dedicated Pool Pumps and their components, as well as replacement motors.

APSP has been proactive in supporting energy efficiency through the adoption of the APSP-15, American National Standard for Residential Swimming Pool and Spa Energy Efficiency, work on national legislative and regulatory efforts, as well as working with the California Investor Owned Utilities (CAIOU's) in supporting Title 20 and the update of this regulation. You will not find another industry group more supportive of efforts to increase energy efficiency standards in the pool and spa industry. As the industry reviews the **Revised Analysis** we have identified the following issues with the proposal. Our comments are with regard to Pool Pumps, and their original components, and separately with regard to the proposed California Energy Commission (CEC) rulemaking concerning replacement motors.

A. Dedicated Pool Pumps

APSP supports efforts to further advance the efficiency standards for pool pumps and motors, as most recently witnessed via the Department of Energy's (DOE) Dedicated Purpose Pool Pump Working Group. APSP recommends the CEC model their efforts on the DOE process which proved to be both effective and fair to those involved. As such, the following comments and recommendations are based largely on what was learned and utilized in the DOE rulemaking.

Initially, and as acknowledged by the CEC, upon its effective date, the DOE Standard for Dedicated Purpose Pool Pumps will preempt all existing state regulations and standards concerning pool pumps and their components. This is consistent with 42 USC 6297 (c), which states "on the effective date of an energy conservation standard established in or prescribed under section 6295 of this title for any covered product, no State regulation concerning the energy efficiency, energy use, or water use of such covered product shall be effective with respect to such product."

In addition, once the DOE Standards are published in the Federal Register, no new rulemaking can take place at the state level. For these reasons, and to more efficiently allocate industry and CEC time and resources, we urge the CEC to withdraw the proposed rulemaking pertaining to pool pumps and their components, and direct its efforts to Section B which will still address replacement motors. The

development of the proposed CEC standards for pool pumps is complex and time consuming and would be rendered moot within a short period after any reasonable effective date.

In the alternative, and to ensure consistency, we urge the CEC to incorporate by reference the agreed upon DOE Standards, including the negotiated effective date which is 4.5 years after publication. APSP believes that it is critical that CEC align the implementation of any revised efficiency standards for pool pumps and motors with the DOE Standards so that the industry can prepare for both concurrently. This period was agreed to and established as the result of the DOE negotiated rulemaking process, which included efficiency advocates, industry, government, and the CAIOU's and was based in substantial part on the complexity, cost and feasibility of compliance. Adopting an accelerated compliance or effective date will upset this delicate balance, and create an unnecessary burden on industry and consumers.

Under any circumstances, we believe that all parties have acknowledged and understand that it is critical that the CEC language match that of the DOE Standards, with regard to definitions as well as performance criteria. Any conflict between CEC regulations and DOE Standards will be highly disruptive to industry as well as consumers and the marketplace in general, forcing manufacturers to comply with criteria that will be preempted in a matter of months.

Therefore, if the CEC still intends to pursue rulemaking in this product category, we submit that the following revisions are necessary.

1. APSP urges the CEC to adopt definitions used by the DOE to provide consistency with the federal regulations and thereby allow manufacturers to have a common platform from which to build upon. Specifically, we recommend CEC use the same DOE definitions for the following:
 - Self-priming
 - Non-self-priming
 - Extra small non-self-priming
 - Pressure Cleaner Booster Pump (PCBP)

This, in turn, will allow for the associated requirements, test methods, etc. to be flexible instead of a "one size fits all" approach (described in further detail below), which would clearly handicap the ability to meet the established federal guidelines.

2. APSP submits that instead of focusing on motor efficiency, the CEC should focus parameters of the overall pump such as but not limited to, energy factor. Water velocity, reduction of hydraulics losses, size of the pump or the pump ability to selectively operate at reduced speed and horsepower, plays the most significant part for the reduction of the energy consumption. The electrical energy used for circulation of each gallon of water (Weighted Average Energy Factor) is what matters the most. In addition, there are examples of products that would meet the new "EL6" federal guidelines yet not have the motor efficiency at either high or low speed as per the CEC regulation.

3. APSP requests that CEC set different requirements for the categories per the federal guidelines as noted above. As noted in the DOE rulemaking, self-priming pumps represent the vast majority of energy saving opportunities, and should rightfully be the focus for updated regulations. The other categories such as non-self-priming and PCBP represent much smaller saving opportunities as well as less financial justification for the homeowner. As such, we propose separate requirements for these categories. Further recommendations regarding PCBP are noted below. This, again, would align with DOE where each category has separate EL requirements.
4. The proposed requirements for pumps larger than 1 THP would effectively eliminate two-speed pumps as they exist today as most do not meet either the high or low speed motor efficiencies (sometimes both). The energy saving opportunities of an existing two-speed vs. a single speed can be significant, so it would be counterproductive to require further product changes for what would amount to minimal incremental savings. APSP recommends that two-speed pumps be allowed but only if they meet two-speed definition and subsequent criteria as described by the federal standard. This would still result in most self-priming pumps greater than 1 THP to be variable speed, but would not eliminate the use of existing energy saving technology.
5. Most PCBP are approximately 1.1-1.3 THP. The proposed requirements would result in these either changing to variable speed, which is impractical for the given application, or reduce the performance to less than 1 THP, which would likely reduce performance of the pressure cleaner, resulting in longer run times and greater energy consumption. The federal guidelines do not differentiate the THP for PCBP and the associated EL aligns with a more efficient single speed option. APSP recommends the CEC adopt similar requirements.
6. As was also discussed in the DOE meetings, many self-priming pumps are used as “auxiliary pumps” for water features, spa booster, etc. These applications are not “speed discretionary”, meaning their application does not allow for reduced speeds associated with significant energy savings. Further, these applications run a fraction of the time of filtration/circulation pumps, thus the associated energy consumption (or saving opportunities) is dramatically lower. By adopting the same federal guideline definitions as noted above, it allows both pump and motor manufacturers to develop products that would not be suitable or easily modified for filtration/circulation pumps or replacement motors, yet still appropriate for low energy consumption auxiliary applications.
7. APSP recommends the CEC adopt the federal guidelines concerning freeze protection which include that if the pump is shipped with freeze protection disabled, the prescriptive requirements do not apply.
8. APSP recommends the CEC adopt the federal guidelines for the pressure cleaner booster pump test procedure, which involves testing the pump at the minimum head the pump can achieve greater than or equal to 60 feet at 10 GPM.

B. Replacement Motors

While the DOE Standards do not specifically address the sale of replacement motors, the Standards are in large part based on analysis of motor efficiencies and performance by Navigant which was presented as part of the negotiated process, and which are available to the CEC. Therefore, it is essential that any state rulemaking addressing replacement motors adhere to the analysis and figures developed by Navigant. **Attached to these Comments as Exhibit “A” are two slides presented at a recent DOE working group meeting addressing this issue.**

Criteria in the current CEC Staff Report are inconsistent with the Navigant analysis and assumptions and require replacement motors in California to adhere to a separate set of criteria. This will place a heavy burden and cost on motor manufacturers, who will be forced to address separate performance criteria for original and replacement motors. This will adversely affect consumers as well. In addition, it would impair the industry’s ability to comply with the DOE Standards which are based on different motor criteria, and, thereby leaving the validity of the CEC’s efforts in doubt and subjecting the CEC rulemaking in this area to a possible finding of preemption.

In the alternative, if CEC will not accept the recommendations of the industry above, the APSP recommends to adjust minimum efficiency levels as shown below, including a new category for through-bolt mount pool and spa motors, which are non-self-priming and used only for above ground pool and portable spa applications.

Motor Design	Full-Speed	Half-Speed	Comment
	(3450 RPM)	(1725 RPM)	
Single-Speed (0 thp up to 0.49 thp)	66%	N/A	Improved alignment with DOE pump and motor standards
Single-Speed (0.50 thp up to 0.99 thp)	72%	N/A	Improved alignment with DOE pump and motor standards
Non-self-priming (thru-bolt mount) Variable/ Multiple/Dual-Speed Pump Motors(up to 5 thp)	70%	50%	Improved alignment with DOE pump and motor standards. This segment can be easily distinguished from inground pool motors by mounting design (thru-bolt) and can also be labeled "For use with non-self-priming above ground pool pumps and spa pumps only!".
Variable/Multiple/Dual-Speed Self Priming Pump Motors(up to 5 thp)	80%	65%	

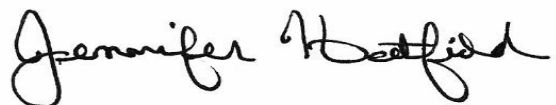
C. Remanufactured Replacement Motors and Pumps

The APSP industry and energy advocates are aware that businesses that remanufacture pool motors and pumps have grown in California and Arizona seeming to exploit a loophole in efficiency regulations that may not cover “repaired” pumps and motors. Since these businesses paint, relabel and sell their products as new items the APSP strongly recommends that such products should be listed and covered by all applicable CEC efficiency regulations. The APSP believes there is a broad consensus with the industry and the energy advocates on this issue.

APSP is confident the industry, CEC and energy advocates, can leverage the successes from the DOE rulemaking to deliver an effective set of efficiency standards for pool pumps and motors and align to ensure consumers realize the maximum benefits. Therefore, APSP respectfully requests that the CEC consider our comments as it develops its final rulemaking.

We thank the CEC for its time and consideration.

Respectfully submitted,

A handwritten signature in black ink that reads "Jennifer Hatfield". The signature is written in a cursive, flowing style.

Jennifer Hatfield
Director, Government Affairs
(941) 345-3263
Jhatfield@apsp.org

Exhibit A of APSP Pool Pump & Motor Comment

Summary of 0.62 Hydro hp Self-Priming Pool Filter Pumps

MPCs at each EL for 1-hp nameplate (1.5 total hp)

Efficiency Level	Design Options			Motor Eff. (%)	WtW Eff. (%)	EF on Curve A (Gal/W)	WEF	Total MPC (\$)	Motor Cost (\$)	Incr. MPC (\$)
	Motor Speeds	Motor Eff.	Wet End Eff.							
EL 0 (Baseline)	1	Low	Low	55% Hi	30%	2.11	2.61	\$102	\$55	n/a
EL 1	1	Mid	Low	69% Hi	38%	2.65	3.27	\$115	\$68	\$13
EL 2	1	High	Low	77% Hi	42%	2.95	3.65	\$134	\$87	\$32
EL 3	2	Low	Low	64% Hi, 38% Lo	35%	5.22	4.61	\$137	\$90	\$35
EL 4	2	Mid	Low	71% Hi, 46% Lo	39%	6.32	5.33	\$147	\$100	\$45
EL 5	2	High	Low	73% Hi, 51% Lo	40%	7.01	5.67	\$157	\$110	\$55
EL 6	Multi/Variable	High	Low	81% Hi	44%	9.24	7.06	\$257	\$209	\$155
EL 7 (MaxTech)	Multi/Variable	High	High	81% Hi	50%	12.66	9.67	\$257	\$209	\$155*

*Product conversion costs are accounted for in the MIA.

Red text indicates changes since previous WG meeting.



Summary of 1.88 Hydro hp Self-Priming Pool Filter Pumps

MPCs at each EL for 1.88 hydro hp (3-hp nameplate, 3.45 Total hp)

Efficiency Level	Design Options			Motor Eff. (%)	WtW Eff. (%)	EF on Curve A (Gal/W)	WEF	Total MPC (\$)	Motor Cost (\$)	Incr. MPC (\$)
	Motor Speeds	Motor Eff.	Wet End Eff.							
EL 0 (Baseline)	1	Low	Low	75%	42%	1.57	1.74	\$192	\$142	n/a
EL 1	1	Mid	Low	79%	49%	1.65	2.03	\$227	\$177	\$35
EL 2	1	High	Low	84%	52%	1.76	2.16	\$248	\$198	\$56
EL 3	2	Low	Low	74% hi, 49% lo	46%	3.89	3.45	\$276	\$226	\$84
EL 4	2	Mid	Low	76% hi, 55% lo	47%	4.68	3.66	\$290	\$239	\$98
EL 5	2	High	Low	83% hi, 62% lo	57%	5.28	4.18	\$303	\$253	\$111
EL 6	Multi/Variable	High	Low	82%	51%	8.39	5.03	\$384	\$334	\$192
EL 7 (MaxTech)	Multi/Variable	High	High	82%	59%	11.63	6.97	\$384	\$334	\$192*

*Product conversion costs are accounted for in the MIA.

Red text indicates changes since previous WG meeting.

