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PHTA-NEMA Attachment to earlier submitted comment

This is the October 21, 2019 comments previously submitted that were to be attached to the PHTA/NEMA comments on this proceeding, submitted earlier today.

Additional submitted attachment is included below.

October 21, 2019

California Energy Commission
Docket Unit, MS-4
Docket No. 15-AAER-02
1516 9th Street
Sacramento, CA 95814-5512

RE: Docket No. 15-AAER-02, Appliance Efficiency Regulations for Replacement Pool Pump Motors

To Whom It May Concern:

The Pool and Hot Tub Alliance (PHTA) and National Electrical Manufacturers Association (NEMA) respectively submit the following comments:

1. Introductory comments

The Pool & Hot Tub Alliance was formed in 2019, combining the Association of Pool & Spa Professionals (APSP) and the National Swimming Pool Foundation (NSPF). PHTA represents over 3,200 company members and 10,616 individual members nationwide, including 222-member companies and 715 individual members in California.

PHTA, NEMA, and their members have a long history of working with the California Energy Commission (Commission or CEC) and appreciate the opportunity to continue a positive collaboration to ensure the citizens of California, and those of the rest of the United States, are provided energy regulations for pool pump motors that balance energy savings with other critical factors important to consumers and industry. We also have worked with the Commission and other stakeholders over the last few years on taking the good work started here in California and encouraging federal regulations for both pool pumps and motors that would ensure savings nationwide and eliminate a patchwork approach to regulation that is not in the consumers best interest nor our industry members.

PHTA and NEMA members participated in the Department of Energy (DOE) Appliance Standard and Rulemaking Federal Advisory Committee (ASRAC) negotiated workgroup on dedicated purpose pool pumps (DPPP), which resulted in a unanimous agreement and a direct final rule (DFR) for pool pumps. We were pleased to see this occur in 2017 and our members continue to prepare for the July 19, 2021, compliance date. PHTA and NEMA members who participated in the DPPP negotiations voiced concerns that DPPP motors must also be addressed; otherwise, a significant loophole would occur. To address this, over the past two years, we have continued work with stakeholders, which include the CEC, to request a DFR for dedicated purpose pool pump motors. That effort resulted in a unanimously agreed upon joint petition, submitted to DOE on August 14, 2018 by stakeholders which consisted of motor and pump manufacturers, consumer advocates, pool service professionals, states, efficiency advocates, utilities, and others.

Since the submittal of that petition, 30 comments in support of the petition were received by DOE in October 2018. Beginning in December 2018 and throughout the Spring of 2019, PHTA and NEMA met with DOE to encourage action, resulting in a labeling approach that would follow the original August petition through requirements being laid out in an UL standard that a proposed DOE rule would then require labeling to ensure compliance. This continued engagement with DOE resulted in publication in

the Spring Unified Agenda that included the pump motor labeling proposal. Based on recent outreach, PHTA and NEMA remain optimistic that DOE will move forward to address this loophole in time for a DPPP motor rule to align with the July 19, 2021 DPPP rule compliance date.

PHTA and NEMA, along with our member companies, continue to work towards the goal of seeing that the DOE issues a rule, based on the original joint petition, addressing pool pump motors. Therefore, we strongly urge the Commission to consider aligning their July 2019 Revised Staff Analysis and Draft Appliance Energy Regulations for Replacement Pool Pump Motors with the August 14, 2018 petition.

2. COMMENTS ON THE CEC JULY 2019 REVISED STAFF ANALYSIS AND DRAFT LANGUAGE

CEC Assumptions About Booster Pump Motor Shipments

In order to make the claim about how much total energy this will save CA, the CEC makes an assumption about the total number of replacement motors being shipped to CA. At the bottom of Appendix page A-4, their report states:

> **California Replacement Motor Shipments**
>
> Staff chose to assume replacement motor shipments represent 25 percent of the total market. Therefore, the U.S. DOE pump shipments represents 75 percent of the market (75%+25%=100%). 25 percent divided by 75 percent is equal to 1 divided by 3. Replacement motor shipments are found by dividing pump shipments by 3.

We believe that the CEC assumption of **25%** is grossly overstated as it applies to booster pumps. Our sales data of booster pump motors sales vs complete booster pump sales indicates that only about **0.5%** of total shipments of booster pumps are motor shipments. If this assumption is used to calculate the actual annual savings, the estimated energy savings will decrease dramatically. Table 7-2 on page 35 of their report (copied below) shows the CEC's calculated savings in GWh and dollars. Based on the correct assumption of 0.5% of booster pump motor sales, these numbers should be reduced to about 1/50th of their current estimate.

Table 7-2: Statewide Annual Savings

		First-Year Savings		Annual Existing and Incremental Stock Savings	
Product	**Application**	**Electricity Savings (GWh/yr)**	**Savings ($M)**	**Electricity Savings (GWh/yr)**	**Savings ($M)**
Replacement Self-Priming Pool Filter Pump Motor, standard-size (1.90 hp)	Residential	2.6	$0.5	19	$3.5
Replacement Self-Priming Pool Filter Pump Motor, standard-size (3.76 hp)	Residential	1.2	$0.2	9	$1.6
Replacement Self-Priming Pool Filter Pump Motor, small-size (0.88 hp)	Residential	10.0	$1.9	73	$13.5
Replacement Non-Self-Priming Pool Filter Pump Motor (1.04 hp)	Residential Commercial	26.0	$4.8	190	$35.3
Replacement Pressure Cleaner Booster Pump Motor (1.24 hp)	Residential Commercial	4.3	$0.8	2	$5.9
Replacement Self-Priming Pool Filter Pump Motor, standard-size (1.90 hp)	Commercial	13.2	$2.4	96	$17.8
Replacement Self-Priming Pool Filter Pump Motor, standard-size (3.76 hp)	Commercial	6.8	$1.3	50	$9.3
Replacement Self-Priming Pool Filter Pump Motor, small-size (0.88 hp)	Commercial	0.6	$0.1	4	$0.8
Total Savings		64.7	$12.0	472	$87.7

Additionally, the shipment data indicates that people don't replace the motors on their booster pumps; instead, they replace the entire booster pump itself. This is due to the low cost difference between the cost of a replacement motor versus the cost of replacement the entire pump. Another motivating factor for the consumer to replace the complete pump, rather than just the motor, is that when they replace the complete pump, they get a 3 year warranty instead of a 1 year warranty that comes with a motor-only replacement. If the cost of the replacement motor were to increase – for example if a variable-speed motor is required for replacement -- this would likely decrease motor sales further even with estimate net energy savings of $77 over seven years. Additionally, there is further data below which would appear to negate the total net energy savings estimate.

CEC Assumptions About Incremental Cost Between Booster Pump and VS Pump

There is a reference to the average consumer price of a motor, in Appendix table A-25 of the CEC report. In this table, as shown in the image below, the CEC cites a DOE TSD Table. Their $611.45 estimate for an 80% efficient VS booster pumps is low for 2019 pricing and what pricing can be projected to be in 2021. From 2015-2019, our variable speed pumps and booster pumps' prices have increased an average of 3% per year. Compounded annually, this translates to approximately 12.5% price increase over that time. Since variable motors are more expensive, on a dollar basis, the cost of a variable speed motor will increase more over time than a single speed motor.

In order to calculate the incremental cost of a VS motor (and thus calculate lifetime savings for the consumer), the CEC take the difference between the baseline booster pump cost (which appears to be from efficiency level 0) and use that as the base cost for comparison against the VS booster pump cost of $611.45 as shown in Appendix, Table A-25 below

Table A-25: Average Consumer Price for Pressure Cleaner Booster Pumps

Efficiency Level	Average Consumer Price 2015 ($)	Incremental Cost 2015 ($)
Baseline	$255.40	--
1	$275.77	$20.36
2	$312.35	$56.95
3	$611.45	$356.05
4	$611.45	$356.05

Source: U.S. DOE TSD Table 8.2.19

When the average annual increase of 3% over the last 4 years (12.5% total) are factored in:

- The new baseline booster pump cost becomes: $255.40 * 1.125% = $287.33
- The new VS booster pump cost becomes: $611.45 *1.125 = $687.88
- The incremental cost for a variable speed pump in 2019 increases from the CECs estimate to $400.55. This would increase a few dollars more in 2021.

This amounts to an additional incremental cost of $44.50 over the CECs initial estimate. As such, the CEC projection of a life-cycle benefit would further decrease from $77 shown in the table below, to approximately $32.50

Table 7-1: Annual Energy and Monetary Savings per Unit

Product	Application	Design Life (years)	Electricity Savings (kWh/yr)	Average Incremental Cost	Average Annual Savings	Life-Cycle Savings	Life-Cycle Benefit
Replacement SP Pool Filter Pump Motor, (1.90 hp)	Residential	7.3	63	$17	$12	$76	$59
Replacement SP Pool Filter Pump Motor, (3.76 hp)	Residential	7.3	86	$10	$16	$103	$93
Replacement SP Pool Filter Pump Motor, small-size	Residential	7.3	1,410	$289	$261	$1,692	$1,403
Replacement NSP Pool Filter Pump Motor	Residential	7.3	1,520	$367	$282	$1,825	$1,458
Replacement Pressure Cleaner Booster Pump Motor (1.24 hp)	Residential	7.3	361	$356	$67	$433	$77
Replacement SP Pool Filter Pump Motor, (1.90 hp)	Commercial	7.3	6,092	$358	$1,130	$7,314	$6,956
Replacement SP Pool Filter Pump Motor, (3.76 hp)	Commercial	7.3	9,502	$348	$1,763	$11,408	$11,061
Replacement SP Pool Filter Pump Motor, small-size	Commercial	7.3	1,579	$380	$293	$1,896	$1,516

It should also be pointed out the numbers that the CEC references for life-cycle savings are **pump** cost comparisons. Since this rule seeks to replace the motor, the more appropriate comparison would be to compare incremental **motor** cost. The incremental cost to the consumer of a variable speed motor vs a single speed booster pump motor is significantly higher than the $400.55 amount calculated above and would actually put the consumer at a net life cycle benefit loss.

CEC proposal inconsistent with DOE petition

As stated before, while we continue to appreciate the fact the latest draft language from CEC staff captures a significant portion of the joint petition submitted to the DOE in August 2018, we would reiterate that it still continues to be inconsistent with that agreement. Specifically, we continue to have concerns with the Commission's proposal to expand the scope of coverage below 1.15 Total HP for the following reasons:

1. Sales in many of these lesser power categories have considerably lower run/use time compared to >1.15 THP, and therefore energy savings and value to the customer will also be lower. Taken by themselves, in the <1.15 THP category, we believe several pump applications will not pass financial feasibility analysis, and therefore they should be carefully re-evaluated if CEC intends to maintain them in this proposal.

2. The addition of the <1.15 THP category impacts the Technological Feasibility analysis. Many small motors <1.15 THP will move from induction designs to Electronically Commutated Motors

(ECM). This creates additional burden and time considerations for manufacturers who have not incorporated these designs already. It is not readily apparent that the CEC has considered this in the feasibility analysis.

3. The insistence that variable speed products are always the best, a foregone conclusion in California, ignores the realities of both physics and practical application. The best example for this is <1.15 THP booster pumps. These products are often run at a fixed speed in typical applications. The addition of a power converter and its associated losses will use more power than a fixed speed motor operating at full load for the short time usage of a power booster application. The CEC is aware of this mismatch, having scaled up the demanded motor efficiency of small booster pump systems to counter the inevitable losses from the incorporation of a variable speed drive. If a small booster pump will only be run at full speed the most cost-effective design is today's readily available fixed-speed motor commonly used for power booster pumps today. Any other design, such as variable speed and a high-efficiency motor, will fail financial feasibility against the readily available alternative. *To insist that small booster pumps must be variable speed will not save energy in any significant amount.*

4. This is not a pool pump regulation; it is a replacement pool pump motor regulation. It is the belief of the industry that a requirement for replacement pool pump motors to be variable speed below 1.15 THP will encourage consumers to seek Federally compliant WEF rated options rather than the CEC-desired more efficient variable speed replacement pool pump motor options.

5. Because the electric motor industry has experienced lost sales due to the impact of out-of-scope alternatives to General Purpose Small Electric Motors, they are sensitive to similar results from this proposal, particularly in the categories noted above. To assist in preventing undercutting of sales, PHTA and NEMA requests CEC develop a detailed import compliance procedure as part of this proposal, to include instructions to Customs and Border Patrol as well as related funding to assure that American suppliers are not negatively affected by unfair competition resulting from an unenforced regulation at the state level.

As such, we would again submit that if the CEC intends to move forward with this proposed rulemaking, they align their proposal to ensure consistency with the approach agreed upon by all interested stakeholders in and presented to the DOE in 2018 for consideration. Otherwise, having two inconsistent rules will certainly create disruption and market confusion that will have adverse effects on both consumers and industry. Alignment across all 50 States is critical and therefore, we believe the approach provided to the DOE should be seriously considered and adopted by the CEC rather than taking a path which is inconsistent with that agreement.

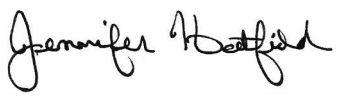
As we have communicated previously, PHTA and NEMA members, have already expended significant resources in preparation for complying with the Federal DPPP pump rule, which goes into effect in July 19, 2021. We will do the same for the motor rule, but with much less time and therefore with much more aggressive efforts if the Federal rule is issued with the same July 19, 2021, compliance date -- which is what we would like to see as an effective date. A separate, different California rule would require our members to also prepare for two different rules; this will require significant additional financial commitment, in addition to more development and staffing resources. Therefore, if the logical and reasonable end goal is the joint petition submitted to the DOE, we sincerely and humbly again urge the CEC to remain fully aligned with that proposal. By doing so, the CEC and California would simply be ahead of the federal action and would likely not have to be concerned with possibly having to revise a rule that may already be in effect at the time when the DOE decides to issue a ruling. Motor manufacturers can then prepare for both, hopefully consistent, rules without having to make varying

products/skus for different markets, which they would otherwise have to do if they were forced to prepare for two different rules.

To summarize, let us reiterate that we appreciate the CEC recognizing the importance of addressing the replacement motor concerns. As we have already made clear to the DOE, if a DPPP motor rule is not put in place, a clear loophole will exist. This will drive nearly all replacement motor business to lower cost, lower quality, potentially unsafe and unregulated motors. This in turn will have a detrimental impact on both the pool industry and consumers; it will also hijack the expected energy savings from the DPPP final rule. Therefore, while we applaud the fact that California wants to move forward as we wait on DOE to act, we believe the best approach is to remain fully consistent – without any deviations -- with the joint petition that was unanimously agreed upon by all those who participated, including the CEC, in its development. This is especially most relevant to the booster pump category.

PHTA and NEMA appreciate the opportunity to comment and provide input towards this important issue. If there are any questions regarding our comments, please feel free to contact the undersigned via email at jhatfield@phta.org and alex.boesenberg@nema.org or via telephone at 941-345-3263 and 703-841-3268

Sincerely,



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