MEMORANDUM OF EX PARTE COMMUNICATION TO THE DEPARTMENT OF ENERGY

Date: Friday, March 1, 2019

Comments on the Joint Stakeholder Proposal for a Direct and Final Rule, 83 FR 45481 (September 18, 2018)

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The purpose of this correspondence is to follow-up on meetings the Association of Pool & Spa Professionals (APSP) and the National Electrical Manufacturers Association (NEMA), along with some of their industry members, had with the Department of Energy (Department) on December 12, 2018 and February 5, 2019. These meetings served as opportunities to provide additional information to the Department in regard to the Joint Stakeholder Proposal for a Direct and Final Rule, 83 FR 45481 (September 18, 2018), and included looking for a possible alternative path forward to prevent erosion of energy savings contemplated by the Dedicated-Purpose Pool Pump (DPPP) Final Rule, 82 FR 5650 (January 18, 2017), if a replacement pool pump motor loophole is not addressed. If not prevented, this erosion of market due to lesser performing motor alternatives will cause a burden on U.S. manufacturers in terms of lost sales of compliant DPPP systems and/or high-performance DPPP replacement motors.

The following comments provide additional information on the alternative approach presented to the Department in the February 5, 2019 meeting, where APSP, NEMA, and industry members proposed that the Department initiate a rulemaking under 42 U.S.C. § 6315(c) and (g) for a labeling rule for Dedicated-Purpose Pool Pump Motors (DPPPM).

Item 1 – Timeline

How long would it take for a manufacturer to get UL 1004-10 on a motor?

	Motor Manufacturer	**Pump Manufacturer**
Existing product that is currently *safety* certified	2 months typical (1 month best case scenario)	0 months if same motor with new label
New single speed product being design for this market (includes existing product with no existing safety certifications)	3 months (2 months for manufacturers with approved testing labs)	18 months (9 months best case scenario for incremental adjustments)
New variable speed product being design for this market (includes existing product with no existing safety certifications)	6-9 months (6 months for manufacturers with approved testing labs)	18 months (9 months best case scenario for incremental adjustments)
New pump product development (less than 15% occurrence)	24 months plus (concurrent pump & motor development)	24 months plus (concurrent pump & motor development)

Item 2 – Costs

There were no costs associated with our original joint stakeholder recommendations due to the fact that these costs were already accounted for in the DPPP rulemaking. This still holds true with the labeling approach, but for negligible incremental costs to the motor manufacturers in obtaining the UL 1004-10 label. Those estimated costs for any given motor manufacturer to implement the proposed DPPPM labeling rule is approximately $30,000-$40,000.

For pump manufacturers, they too will have only a minor cost associated with the labeling proposal to validate alternate motors and have them listed with appropriate agencies. Those estimated costs to any given pump manufacturer to implement the proposed DPPPM labeling rule is approximately $200,000-$300,000.

Item 3 – Threshold Requirements

The proposal will meet the Department's threshold requirements "for significant energy savings," as defined in DOE's February 13, 2019 proposed "Process Rule." The savings from the proposed DPPPM labeling rule would be 50% more than the 3.8 Quads savings found from the DPPP rule. This means an additional 1.9 Quads will be saved by the proposed DPPPM labeling rule above the savings established by the DPPP rule.

Energy Savings Calculation Methodology: The DPPP rule estimated saving 3.8 Quads from 40% of variable-speed pumps. A DPPPM rule will result in the mix shifting back to current scenario. Resulting additional energy savings pickup from 20% increase in variable speed pumps and 40% variable speed replacement motors i.e. total of 60%, which is 1.5 more than the DPPP rule alone. Hence the resulting savings from the proposed DPPPM rule is estimated at 3.8 X 1.5 or 5.7 Quads.

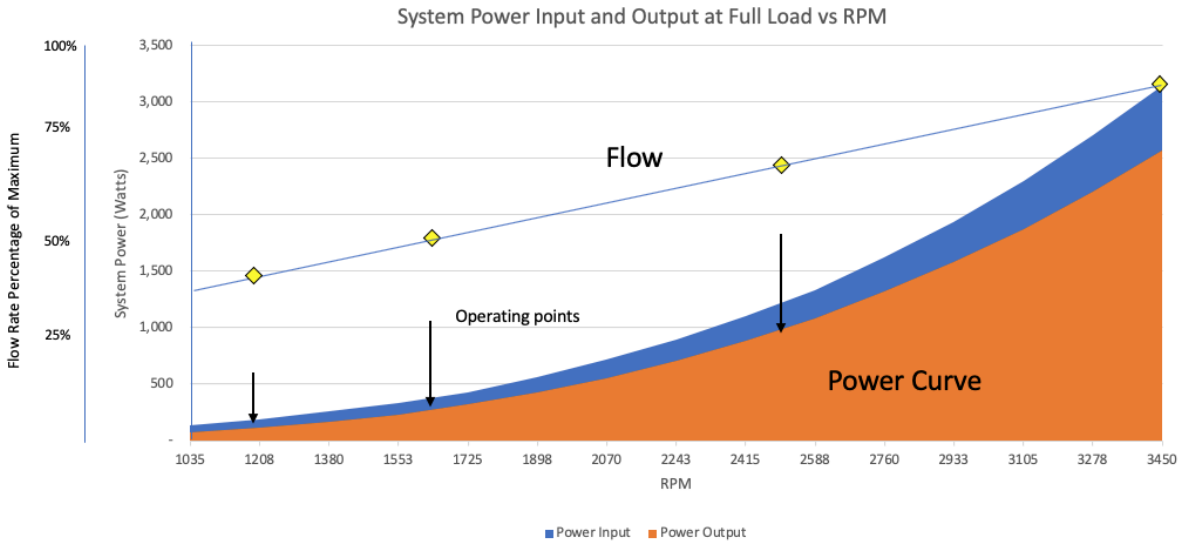
Scenario	**Current**	**2021 (compliance date of pool pump standard)**
Motor replacement	40%	60%
New pump/motor combination purchased	60%	40%

Item 4 – How a Dedicated Purpose Pool Pump Motor works.

Adding a Power Converter allows the Department to determine energy use [power]. Affinity law governs a motor controlled by a power converter.

- Speed is proportional to the flow while the power is proportional to the cube of the speed.
- If speed is halved, then the power input is reduced to one-eighth the original power.

- Adding the power converter dramatically reduces the power necessary for pool pump applications far exceeding energy savings from efficiency improvements in a component thus providing returns in less than one year.
- Table shows actual power usage at typical pool pump operating points.



3.45HP variable speed pool pump motor and control power required at three pool operating speeds. Input power ranges from over 3000 watts at 3450 rpm to a low of less than 150 at 1200 rpm.

Item 5 – Labeling will assist consumers with making purchasing decisions.

Historical impact of consumer labeling programs:

- General purpose premium efficient motor designs were sold without a label or special mark for over twenty years. Market penetration never reached 10% of the units sold.
- In 2001 NEMA introduced the NEMA Premium compliance mark. Within three years premium motors jumped to over 25% of the units sold, as power utilities and end-users added NEMA Premium to specifications.

Successful consumer labeling programs:

- Federal procurement officers were directed to specify NEMA Premium by EO in 2005.
- In 2010 EISA included NEMA Premium levels and sales neared 80% of the market.
- Energy star variable speed pool pump motor sku availability grew from less than 20 in 2013 to over 120 today as a result of consumer awareness provided by the Energy Star label.

Conclusion:

- A consumer label more than doubled market penetration of premium product in three years. However, the combination of a label with a DOE regulation accelerated the product use much faster.

- Our proposal to the Department is to adopt proven methods it has used for motors in the past and apply these methods to the replacement pool pump motor.

Item 6 – Proposed regulatory definition for DPPPMs

The industry strongly recommends that the Department use the definition provided for in the draft UL 1004-10 Standard as provided on February 5, 2019. In section 2.3 of the draft standard, the DPPPM is defined as follows:

> **2.3 DEDICATED-PURPOSE POOL PUMP (DPPP) MOTOR - An electric motor that is single-phase or poly-phase and is designed and/or marketed for use in dedicated-purpose pool pump (DPPP) applications.**

The Department has asked about the significance of both the square flange and j-shaft designs, which are as follows:

- Significance of the square flange: The reasons why the square flange is important to the construction of the DPPPM are due to the fact this design keeps the shaft balanced and stable. The industry long ago transitioned to the square flange, as it reduced variation and location in the shaft, and with the reduced variation, manufacturers had increased reliability. The industry is heavily imbedded in this design; therefore, it would be a monumental task to move away from the square flange to a different design. Although it would be a considerable undertaking for U.S. manufacturers to move away from the square flange design, the concern of using this characteristic as part of a DPPPM definition is the risk that foreign manufacturing would then design product without this characteristic in order to circumvent any rule that were adopted by simply changing the feature, even only slightly.

- Significance of the j-shaft: The j-shaft has a broader pump application than just the pool pump motor market such as large circulators, domestic water supply and close coupled pumps; therefore, it would not be recommended to include this characteristic into a DPPPM definition.

The industry would not recommend that either characteristic be included in a DPPPM definition for the reasons stated.

Summary of Comments – APSP, NEMA and their members respectfully requests the Department consider initiating a rulemaking under 42 U.S.C. § 6315(c) and (g) for a labeling rule for DPPPMs based on all previous communication provided in addition to the information within this communication.