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T0: C.E.C. California Energy Commision.

RE: Title 20 Swimming Pool Pump Replacements

This letter is to provide data and insight to help review Title 20 provisions and changes that may need to be made to the current regulations and wording. My goal is to save as much energy for my customers as possible, with them of course having the least out of pocket expense.

I started All Clear Pool and Spa in 1990 and have grown to be one of California's largest independent service and retail supply companies. We service approximately 1200 swimming pools in a 7 mile radius of our main Elk Grove location. We have repaired well over 7000 different swimming pools in this area. I have, much like many of my fellow IPSSA members, strived to continuously grow my knowledge in the swimming pool industry and have spent countless hours in seminars on hydraulics and all other swimming pool related sciences.

The swimming pool industry is very much different from region to region, Northern California is very different than Southern California. Regions have such a wide variance depending on the builder that was succesful in selling a particular concept, if customers latch on to their concept normally other builders will copy their basic equipment package as to increase their sales closings. Here are some listings of companies that have been very succesful and the type of equipment they installed.

I have never sold over a 1 hp filter pump on an system I have installed, regardless of gallonage. I have always educated my customers on the fact that horsepower does not necessarily mean more flow. It just means more electricity, I do worry that many of the online companies and smaller service firms may not be adhering to the new Title 20 guidelines because of the confusion in wording of industry standards.

I would like to point out that when we are calculating savings on energy that we are using the NSF standards of an 8 hour turnover rate and would argue that there have not been new tests done with regards to how much time can be dropped with the addition of a pool sweep that is brushing and agitating the surface. I have found that with running a pool with a sweep I can normally decrease my filter time by at least 25% below the recommended 8 hour run time.

The following is a few examples of typical pools and who biult them in my area and what we have done to improve there efficiency.

Premeir Pools, approximently 12,000 pools
Pump :1.5-2.0 HP High Head Pump
Cleaner: Rayvac Pool Cleaner with Energy Kit (this kit takes flow from the pump and has a small screen to filter water so you can pressurize the sweep line only to reduce filter pressure dramatically.)
Filter: Pac-Fab 150-460 cartridge filter
Avg gallons 18,000

Normally we upgrade their sweep to a Polaris 360 which requires 5 psi less psi to operate and downsize impeller to ¾ hp to max 1 HP if the have solar. We normally upgrade the filter to between 300 Sq ft. to 400 Sq Ft.

We have probably changed at least 500 of these systems to be a ¾ to 1 HP high head pump and are able to run them for 4-6 hours in summer and maintain good water quality. Sometimes with only the cost of an impeller and seal change . (Less than $100.)

This system will not work in a scenario where we would need to operate below 1.0 total horsepower (if the service factor is multiplied times the horsepower).

If I were to take the system above to a 2-speed system ($100.) I would need to add a valve actuater ($229) to turn off the energy kit on low speed and add a controller ($495.) that would control these functions. These customer would spend at least an additonal $950. in labor and parts cost to change the system. I do not feel that the customer above would benefit any more than just downsizing to single speed full-rate ¾ Hp High Head pump.

Blue Haven Pools Over 2000 pools
Pump 2hp 2speed Pump high head
Filter 400
Cleaner Rayvac plumbed after the Filter (this is not a safe way because of the increased psi that can build up and I have seen many tanks blow or crack).
Many are configured with solar

In the above configuration, we see the worst use of a 2-speed pump as the solar is now being run by a 2 Hp pump for 8 hours a day during peak usage.

I have changed many of these systems to be a 1 HP pump single speed to run the solar and system just fine and in winter they only run about 3 hours a day in the middle of the night. System is also safer due to less high pressure potential due to lower horsepower.

In both the above scenarios, I do not believe it helps to have 2-speed systems as they will not move the cleaner on low speed. Agitation does a much more efficient job of circulating than just low flow water movement. Most of my pools with energy systems, only need to run 4 – 6 hours in peak season to keep them algae free and clean, that makes them more efficient in the long run than a larger horsepower 2-speed system.

Multi-speed pumps with Super magnet technology, are very good for systems where there is solar and an energy cleaning system. I have been experimenting with this new technology and will say it has tremendous saving potential. I put one in yesterday where

with the solar running I am only pulling 2 amps, but I will be using the existing booster for now to power the sweep 3 hours a day at an additional 5.6 amps, but overall the customer is saving immensely. However at the high costs of this system he will take about 4 years to pay for this new technology.

The largest problem I see with these pumps is that I feel we need a lock on our rpm speed. That once a professional sets the highest rpm allowed, that another professional must go out if this is to be increased as it could lead to future entrapment issues if customers change initial speed settings later.

I am available for further comment and discussion in detail of these scenarios.

Deon L. Nesson, CEO All Clear Pool and Spa