

**DOCKETED**

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## **Comments Related to Flexibility and Safety**

*Additional submitted attachment is included below.*

Comments prepared for submission to the California Energy Commission on the matter of flexible demand standards for pool controls.

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## **General Comments**

The Commission should be complimented for continued progress toward enabling a truly integrated electric energy system in California. An integrated system would seamlessly integrate central and bulk electric power generation; bulk electric energy storage; distributed electric power generation and storage (aka, distributed generation, and storage resources); and high efficiency, controllable electric end use devices and appliances such as pool equipment. Obviously, this development must proceed incrementally. These standards are a necessary step. This reviewer has comments related to the proposed standard regarding two elements: Flexibility and Safety.

## **Flexibility of Pool Pump Controls**

The pattern and amount of energy consumed by buildings (including electric pool pumps and appurtenances) as consumers of electricity is dependent on several attributes primarily involving the building and its configuration, specifically its electrical and thermal characteristics, as well as consumer behavior in setting controls and operating equipment. These include:

- The electric energy consuming devices and appliances including pumps, external adjustable speed drives, electric heaters as well as how they are installed.
- The energy and environmental controls which are part of the pool system and control or influence the operation of the pool system.
- The influence and participation of building owners and occupants. This includes how they set thermostats and controls and how, when and if they override and change settings. It also includes basic assumptions about the pool demand may respond if there are changes in occupancy, incoming make up water temperature, insolation from solar and ambient conditions.

The Commission faces a difficult challenge in creating both “General Requirements” section 169.2 and “Appliance Specific Standards section 169.3.

The difficulty in creating standards is to allow the adoption of controls which allow nearly unlimited flexibility to enable the integration described above. Constraints contained in the proposed regulation such as default operating schedules will need to eventually be replaced by dynamic pricing. Also, the proposal seems to assume that pool pumps and ancillary equipment operate in only two states: on and off. However, with the continued availability of variable speed motors and pumps, the demand can be variable.

As an example of future changes which should encourage flexibility: The Federal Government continues to study the proposition to modify appliance efficiency standards and replace them with broader standards which would necessitate enhanced flexibility. If these types of standards proliferate, then a more flexible pool pump control standard may facilitate adopting such national standards in California.

### **Safety of Pool Pump Equipment**

In an effort to be sure that new pool pump and related equipment is safe, the Commission may wish to consider requiring that the National Fire Protection Administration (NFPA) standard 70A, (The National Electrical Code) requirements for one and two family dwellings and NFPA 70B, Standard for Electrical Equipment Maintenance be met for all new installations. In addition, the Commission should consider mandating that all electrical devices be labeled by a recognized National Recognized Testing Laboratory (NRTL), such as Underwriters Laboratory (UL)

Respectfully Submitted, Clark W. Gellings, PE April 5, 2023