

DOCKETED

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Project Title:	Pool Controls Rulemaking
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Document Title:	Initial Statement of Reasons (ISOR) for Pool Controls
Description:	The proposed flexible demand standards for pool controls will require all pool controls to have a default schedule for the operation of pool equipment and internet connectivity to enhance flexible demand capabilities.
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CALIFORNIA ENERGY COMMISSION

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**INITIAL STATEMENT OF REASONS**

2023 Flexible Demand Appliance Standards for Pool Controls
Docket No. 23-FDAS-01

INTRODUCTION

The California Energy Commission (CEC) proposes to adopt new Chapter 4.1, Article 1 and the following new sections 1690, 1691, 1692, 1693, 1694, 1695, 1696, and 1697 into Title 20, California Code of Regulations (CCR) (“the Proposed Action”), related to flexible demand appliance standards (FDAS) generally and to pool controls specifically, after considering all comments, objections, and recommendations, regarding the Proposed Action.

PROBLEM STATEMENT

The Warren-Alquist Act establishes the CEC as California’s primary energy policy and planning agency. Since 1976, the CEC has adopted cost-effective and technically feasible appliance standards that set a minimum level of energy or water efficiency, as part of the CEC’s mandate to reduce the wasteful, uneconomic, inefficient, or unnecessary consumption of energy.

In 2019 the California Legislature passed Senate Bill 49 (SB 49, Skinner, Chapter 697, Statutes of 2019) granting the CEC with a new authority to develop standards for flexible demand technologies to reduce greenhouse gas (GHG) emissions from electricity generation. Flexible demand technologies enable an appliance to schedule, shift, or curtail the electrical demand with the consumer’s consent. The CEC has identified pool controls, devices that set the daily schedule of the pool filter pump, pool heater, chlorinator, and pressure cleaner booster pump, as an ideal candidate for the first of California’s flexible demand appliance standards.

Therefore, the CEC proposes to adopt a new Chapter 4.1, Article 1 to Title 20 for flexible demand appliance standards. The proposed additions to Title 20 would adopt specific provisions for pool controls and general provisions that will apply to this and future FDAS. The proposed pool control standards will require all pool controls to have a default schedule for the operation of pool equipment and internet connectivity to enhance flexible demand capabilities.

PURPOSE

The purpose of the proposed regulations is to carry out the CEC's statutory mandate in SB 49 to develop standards for flexible demand technologies to reduce GHG emissions from electricity generation. The CEC is proposing to do this through the adoption of a new Chapter in Title 20 dedicated to flexible demand appliances standards.

BENEFITS

The specific benefits of the proposed regulations are utility cost savings to the consumer. The proposed standards are cost-effective, technically feasible, and would avoid GHG emissions associated with electricity production by 394,000 metric tons of carbon dioxide equivalent (CO₂e) in 2033, at full stock turnover. The standards would shift 64 gigawatt-hours (GWh) of electricity off peak during the first year the standard is in effect and 682 GWh of electricity during the year at full stock turnover. Consumers will save an estimated \$1,131 per appliance over the life of the device by shifting the time of electricity use. The proposed regulations should also enhance the reliability of the electrical grid by shifting electricity demand.

STATEMENT OF SPECIFIC PURPOSE AND NECESSITY

SECTION 1690. SCOPE

SPECIFIC PURPOSE

The specific purpose of this section is to create a platform for adoption of minimum flexible demand standards for appliances, and to specify pool controls as being within the scope of these standards. Another purpose of this section is to specify which transactions involving appliances covered by the flexible demand standards are subject to the proposed regulations.

NECESSITY

Section 1690 is necessary to create an extensible framework for flexible demand standards, consistent with the open-ended direction in Public Resources Code section 25402(f)(1) to develop such standards for appliances as found to be feasible and cost-effective. Subsection (a)(1) is necessary to identify pool controls as the first appliance subject to these new regulations and associated minimum standards. Specifying which transactions involving flexible demand appliances are covered by the proposed regulations is necessary to inform the public of the types of conduct the regulations will cover and will enable fair and effective enforcement of the regulations.

SECTION 1691. DEFINITIONS

SPECIFIC PURPOSE

The specific purpose is twofold: 1. to provide definitions of terms used throughout the proposed regulation that will apply to the pool controls FDAS and future FDAS as well,

and 2. to provide definitions of terms used in the proposed regulations which are specific to the pool controls FDAS itself.

NECESSITY

The FDAS definitions are necessary to ensure that the terms used within the new regulations will have clear and unambiguous meaning to readers, including the public, and particularly to the persons and organizations affected by the regulations. General definitions have been added to apply to the pool controls FDAS and future FDAS appliances as they are added to the regulations and definitions specific to pool controls are being added as well.

SECTION 1692. GENERAL REQUIREMENTS

SPECIFIC PURPOSE

The specific purpose of this section is to delineate the testing, marking, cybersecurity, and reliability requirements that will be applicable to each appliance identified in the scope of this proposed article (section 1690).

NECESSITY

Section 1692(a) Testing: Subsection (a) is necessary to create, within the general framework of the proposed regulations, consistent rules applicable to testing laboratories for performance of any specified product compliance tests such that the State and outside parties can have confidence in the accuracy and repeatability of reported results.

Section 1692(b) Marking: Subsection (b) is necessary to create, within the general framework of the proposed regulations, consistent minimum marking requirements (including the manufacturer's name, brand or trademark, model number, and dated of manufacture) that allow for a given unit of a regulated product or device to be identified and matched to reported compliance information, and to do so in a way that is consistent with existing, potentially applicable appliance marking requirements relating to energy efficiency.

Section 1692(c) Cybersecurity: Subsection (c) is necessary to create, within the general framework, cybersecurity requirements (including provisions for device identification and configuration, data protection, passwords, software updates, restart settings, automatic rejoin, and restart settings) consistent with applicable State and national standards that minimize the risk that inclusion of flexible demand features will create vulnerability in products within the scope of these regulations.

In addition to being crucial to customer acceptance of and confidence in FDAS measures, cybersecurity requirements are mandated by Public Resources Code section 25402(f)(2), which states that the CEC "shall adopt, at a minimum, the North American Electric Reliability Corporation's (NERC) Critical Infrastructure Protection standards." This section is a direct incorporation of NERC standards determined by staff, via

consideration of the National Institute of Standards and Technology framework for cybersecurity, to be applicable to the appliances proposed for inclusion and anticipated for future inclusion in the Scope of this Article.

SECTION 1693. APPLIANCE SPECIFIC STANDARDS AND REQUIREMENTS

SPECIFIC PURPOSE

The specific purpose of this section is to provide the minimum flexible demand standards applicable to each appliance identified in the scope of this proposed article (section 1690).

NECESSITY

Section 1693 (a) This section is necessary to unambiguously state that the minimum standards in all subsequent subsections are mandatory for each unit of every appliance subject to the proposed regulations individually, and in so doing eliminate the chance of misconstruing these sections as allowing some units of a regulated appliance to fail to meet minimum standards.

Section 1693 (b) This subsection, inclusive of its subsections, is necessary to establish minimum flexible demand standards for pool control equipment consistent with SB 49 and in so doing realize GHG reduction benefits and other benefits anticipated to result from the presence and use of these features. Public Resources Code section 25402(f)(5) requires that FDAS that are interoperable, easy to use, and accessible to the internet be prioritized.

Section 1693 (b)(1) This subsection is necessary to establish a specific effective date for the standards. In addition, Public Resources Code section 25402(f) requires that FDAS requirements “shall become effective no sooner than one year after the date of their adoption or updating.”

Section 1693 (b)(2) This subsection is necessary to establish minimum standards applicable to pool controls (internet connectivity, clock requirements, and default operating schedule). It is necessary for the pool controls to be connected to the internet so that users and others with the users’ consent be able to manage the operation of the controls to optimize their operation for the sake of maximizing their benefits with respect energy usage at times best for minimizing GHG emissions in electricity production. It is necessary that the devices’ internal clocks to be accurate and retain their settings in the event of power outages to ensure that the clock supports the successful performance of scheduling and load-shifting features. For these same reasons, it is also necessary that pool controls be programmed with a default schedule that maximizes the controls’ load shifting ability.

Section 1693 (b)(3) This subsection is necessary to unambiguously state that there are no test steps or procedures applicable to pool controls, and in so doing preclude any implication that the requirements in section 1692(a) apply to pool controls. This is

because CEC staff did not identify any applicable industry test standards that would assist in ensuring compliance with minimum standards and did not find that establishing a verification test for manufacturers to perform prior to device certification or sale would provide benefits in excess of associated costs.

Section 1693 (b)(4) This subsection is necessary to unambiguously state that there are no additional marking requirements, i.e., beyond those stated in section 1692(b), applicable to pool controls. This precludes any implication that any additional information required to be reported for pool controls must also be marked on the controls. This is because CEC staff determined that the general marking requirements are adequate for compliance and enforcement procedures applicable to these devices.

Section 1693 (b)(5) This subsection is necessary to unambiguously state that there are no additional cybersecurity requirements, i.e., beyond those stated in section 1692(c), applicable to pool controls. This precludes any implication that pool controls are subject to additional requirements beyond those that apply generally for all appliances subject to this Article. This is because CEC staff determined that the general cybersecurity requirements are adequate for addressing cybersecurity risks applicable to these devices.

SECTION 1694. CUSTOMER CONSENT

SPECIFIC PURPOSE

The specific purpose is to maximize the chances that flexible demand features are utilized without abridging the ability of customers to operate their devices and equipment in the manner of their choosing nor causing information to be collected or exchanged without consent. In addition, Public Resources Code section 25402(f)(7)(A) requires customer consent for demand flexibility activities and functions.

NECESSITY

Section 1694 is necessary to ensure that owners and operators retain complete control of devices and equipment that possess automated demand flexibility features, and to prevent manufacturers of regulated appliances from misinterpreting or misapplying minimum demand flexibility standards to the detriment of consumers. In addition, it is necessary because Public Resources Code section 25402(f)(7)(A) requires customer consent for demand flexibility activities and functions. This is also necessary to foster customer confidence in and support for the proposed regulations.

SECTION 1695. CERTIFICATION REQUIREMENTS

SPECIFIC PURPOSE

The specific purpose is to establish certification requirements for pool controls.

NECESSITY

Section 1695(a) is necessary to establish a mechanism for formally documenting and certifying product compliance with applicable flexible demand standards. This will include the information CEC staff determined necessary to accomplish this, for example, product model numbers, manufacturer and filer contact information, testing and performance information, and an attestation of compliance, completeness, and accuracy.

Section 1695(b) is necessary to establish a mechanism for reviewing certification statements, records and information for completeness and accuracy for acceptance or certification of an appliance, to ensure that errors or absences can be corrected, and non-compliant products be prevented from being deemed compliant with the requirements of this proposed regulations.

Section 1695(c) is necessary to establish and maintain a reliable database of appliances that comply with the requirements of the proposed regulations, to ensure an appropriate mechanism for retaining records of appliance models certified by their manufacturers as compliant and displaying sufficient records so that retailers and consumers can make informed decisions about what regulated appliances to sell or buy.

Section 1695(d) is necessary to authorize the Executive Director to provide notice to the manufacturer where product information is deemed incomplete, inaccurate, or the product itself is otherwise non-compliant. This is necessary to provide an accountability mechanism for addressing instances where information, records, or products are determined not to fully comply with the requirements of the proposed regulations.

Section 1695(e) is necessary to ensure the accuracy of records with respect to manufacturer products, and to provide mechanisms for updating or retiring records when products are modified or discontinued such that the published list of compliant models is kept accurate and useful.

Section 1695(f) is necessary to allow and account for use of external compliance specialists and ensure that use of outside parties does not compromise manufacturer responsibility with respect to their regulated products.

SECTION 1696. DATA SUBMITTAL REQUIREMENTS

SPECIFIC PURPOSE

The specific purpose is to identify, in regulation, the information manufacturers are required to submit to the CEC to demonstrate that they meet the requirements of the proposed regulations and may be legally introduced into commerce in California.

NECESSITY

Section 1696(a) is necessary to establish uniform, basic information across all regulated products, ensure that listings connect each regulated appliance to its responsible manufacturer, and ensure that all basic, commonly applicable criteria relating to device communications are met. This is also necessary so compliance with the proposed regulations may be verified by CEC staff, manufacturers, distributors, and members of the public.

Section 1696(b) is necessary to establish, via a comprehensive series of true-false questions, compliance with all appliance-specific standards for pool pump controls present in section 1693. This is also necessary so compliance with the proposed regulations may be verified by CEC staff, manufacturers, distributors, and members of the public.

SECTION 1697. COMPLIANCE, ENFORCEMENT, AND ADMINISTRATIVE CIVIL PENALTIES

SPECIFIC PURPOSE

The specific purpose is to define the compliance and enforcement actions that the CEC can engage in, and the potential penalties that can be assessed in cases where products are found to be out of compliance with the requirements of the proposed regulations. Public Resources Code section 25402.11 authorizes the CEC to adopt regulations “establishing an administrative enforcement process” for violations of regulations (like the proposed regulations) that are adopted pursuant to Public Resources Code section 25402(f). This section of the proposed regulations would adopt this administrative enforcement process. Another purpose of this section is to specify which transactions involving appliances covered by the flexible demand standards are subject to the proposed regulations. The section specifies a compliance and enforcement process that involves a description of proscribed activities, information collection, administrative civil penalties, notices of violation, a settlement process, an administrative hearing process, other enforcement proceedings, and a standard of judicial review.

NECESSITY

Section 1697(a) is necessary to specify which transactions involving flexible demand appliances are subject to the proposed regulations and is necessary to inform the public, manufacturers, distributors, and others of the types of conduct the proposed

regulations will cover and enable fair and effective enforcement of the regulations. This subsection is necessary to empower the Executive Director to inspect records and devices as needed to investigate questions of compliance and identify noncompliance, and in so doing ensure manufacturers are accountable for their respective products and compliance statements. The section is necessary to establish fundamental components of the compliance and enforcement process that involve a description of proscribed activities and information collection.

Section 1697(b) is necessary to establish monetary penalties sufficient for deterring noncompliance, and to ensure that the mechanism for assessing and applying monetary penalties is fair and consistent with all applicable laws. The section is necessary to establish other fundamental components of the compliance and enforcement process that involve administrative civil penalties, notices of violation, a settlement process, an administrative hearing process, other enforcement proceedings, and a standard of review.

TECHNICAL, THEORETICAL, OR EMPIRICAL STUDIES, REPORTS, OR SIMILAR DOCUMENTS.

The CEC relied upon input from various stakeholders, subject matter experts, and interested parties that provided information, feedback, and subject matter expertise from operational, technical, and manufacturing perspectives.

The CEC also relied upon the following document:

FINAL STAFF REPORT. Analysis of Flexible Demand Standards for Pool Controls. February 2023. CEC-400-2023-001

CONSIDERATION OF REASONABLE ALTERNATIVES, INCLUDING THOSE THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

No reasonable alternatives to the proposed regulations have been proposed that would lessen any adverse impact on small businesses or that would be less burdensome and equally effective in achieving the purposes of the regulations in a manner that achieves the purposes of the statute being implemented.

The CEC is proposing to set a default schedule for major pool operations. The default schedule would command the pool heater, pressure cleaner booster pump, and high-speed pool filter pump to begin and complete operations between 9 a.m. and 3 p.m. local time, and to avoid activity between 4 p.m. and 9 p.m. local time. The alignment minimizes GHG emissions from electricity generation and is advantageous to consumer utility bill savings.

In addition to the proposed regulation, the CEC evaluated several alternatives including:

Alternative One would require connectivity capability as specified in this proposal. The pool control would default to a schedule to minimize utility bill costs per the consumer's time of use (TOU) electric rate. The device would connect with the CEC's Market Informed Demand Automation Server (MIDAS) rate database to obtain the consumer's rate. The alternative would provide consumers with utility bill savings, but because the TOU rate lacks information on GHG emissions intensities, it does not achieve the GHG emissions reductions of the other alternatives or the proposal. This would be a lost opportunity for flexible demand appliance technology to reduce GHG emissions in California. Alternative One is not the preferred option because it will achieve a minimal reduction of GHG emissions compared to the staff proposal.

Alternative Two also requires connectivity capability. The pool control would default to a schedule to minimize GHG emissions per the marginal GHG emission day-ahead forecast. This alternative would provide consumers with utility bill savings and reduce GHG emissions, but the overall utility bill savings for consumers from this alternative would be significantly less than the proposal. Pool controls operating on a marginal GHG emissions schedule may also not meet consumer expectations, as the controls may come on at unexpected times to access the lowest GHG emission rate. Alternative Two is not the preferred option because the significant tradeoff in consumer utility bill savings for additional GHG emissions reductions is less cost-effective than the staff proposal.

Alternative Three would require connectivity like previously described options. The pool control would default to a schedule based upon the TOU rate and the day-ahead marginal GHG emission forecast. The TOU and marginal GHG emission rates would be combined through consideration of the social cost of carbon. This alternative achieves the best overall monetized benefit but with lower avoided GHG emissions than Alternative Two and the staff proposal. Because the schedule would be based, in part, on marginal GHG emission rates, the pool controls may operate equipment at unexpected times, leading to less consumer acceptance. Alternative Three is not the preferred option because the significant tradeoff in GHG emissions reduction for additional utility bill savings is less cost-effective than the staff proposal.

SPECIFIC TECHNOLOGIES OR EQUIPMENT

The proposed regulations do not mandate proprietary technology or equipment. The proposed regulations would require that pool controls be able to connect to the internet, have clock control features, and be pre-programmed to operate on a schedule specified in the proposed regulations. The benefits of these requirements (to the extent they may be considered prescriptive requirements) could not be achieved by a performance standard (i.e., one that required pools to be operated individually in such a way as to achieve the same benefits), given the difficulties inherent in crafting an effective, feasible performance standard and in quantifying and verifying the operation of the significant number of pools in the State.

ECONOMIC IMPACT ANALYSIS/ASSESSMENT

The Creation or Elimination of Jobs within the State of California

The CEC estimates the proposed regulations will have an overall positive employment impact for California. Jobs created by household utility bill savings will lead to greater job creation and more than offset possible slight reduction of jobs in the electric utility sector due to reduced spending on utility bills. Consumers will have an increase in disposable income due to annual reduced electricity bills in 2033. The utility sector is estimated to reduce employment by 707 jobs, while an additional 3,459 jobs will be created as a result of the change in discretionary spending of households with flexible demand pool controls. Net employment is estimated to increase by 2,752 jobs at full stock turnover resulting from proposed regulations. Therefore, the CEC has determined that jobs will be created, and will not be eliminated as a result of the proposed regulation.

The Creation of New Businesses or the Elimination of Existing Businesses within the State of California

The proposed regulations do not create the need for a new good or service. Instead, they require the improvement of existing goods in the market. The economic impact on business is expected to be small compared to the total sales, and insufficient to have an adverse economic impact affecting business. The proposed regulations set new flexible demand appliance standards that will require manufacturers to produce pool controls that have flexible demand capabilities. The CEC estimates that about 1,300 businesses will potentially be affected in California including retailers and distributors, however, flexible demand appliance shipments and sales are not expected to change significantly because of the proposed regulations. Therefore, the CEC has determined that new businesses will not be created or eliminated as a result of the proposed regulations.

The Expansion of Businesses Currently Doing Business within the State of California

The proposed regulations do not create the need for a new good or service. Instead, they require the improvement of existing goods in the market. The economic impact on business is expected to be small compared to the total sales, and insufficient to have an adverse economic impact affecting business. The proposed regulations set new flexible demand appliance standards that will require manufacturers to produce pool controls that have flexible demand capabilities. The CEC estimates that about 1,300 businesses will potentially be affected in California including retailers and distributors, however, flexible demand appliance shipments and sales are not expected to change significantly because of the proposed regulations. Therefore, the CEC has determined that the proposed regulations will not result in an expansion of business currently doing business within the State of California.

Benefits of the Regulations to the Health and Welfare of California Residents, Worker Safety, and the State's Environment

The benefits of the proposed regulations are utility cost savings to the consumer and lower statewide energy use and enhanced grid reliability. The proposed standards are cost-effective, technically feasible, and would avoid GHG emissions associated with electricity production by 394,000 metric tons of CO_{2e} in 2033, at full stock turnover. The standards would shift 64 GWh of electricity off peak during the first year the standard is in effect and 682 GWh of electricity during the year at full stock turnover. Consumers will save an estimated \$1,131 per appliance over the life of the device by shifting the time of electricity use.

The proposed regulations will not adversely impact the health and welfare of California residents, worker safety, or the State's environment.

Results of the Economic Impact Assessment/Analysis

The CEC concludes that: (1) the proposal will create jobs within California, (2) that the proposal will eliminate jobs within California, (3) the proposal will not create new businesses in California, (4) the proposal will not eliminate existing businesses within California, and (5) the proposal will not result in the expansion of businesses currently doing business within the State.

DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

The CEC has determined that there are no existing comparable federal regulations or statutes.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT AFFECTING BUSINESS

The CEC has made an initial determination that the proposed regulations will not have a significant adverse economic impact affecting business. This determination is supported by the detailed savings and cost analysis performed by staff and contained in the Staff Report available in the proceeding's docket, *Staff Report: Analysis of Flexible Demand Standards for Pool Controls*. CEC Publication Number: CEC-400-2023-001 The Staff Report utilizes information obtained by a variety of sources including industry, the Department of Energy, and California utilities.

FOR FURTHER INFORMATION

Inquiries concerning all aspects of the rulemaking process, including the substance of the proposed regulations or any other information upon which the rulemaking is based, should be directed to Corrine Fishman at corrine.fishman@energy.ca.gov.