

**DOCKETED**

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*Comment Received From: California Investor Owned Utilities  
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**Joint Comments to FDAS Pool Pumps 15-day Language**

*Additional submitted attachment is included below.*



July 10, 2023

California Energy Commission  
Flexible Demand Appliance Standards Unit  
715 P Street  
Sacramento, CA 95814

Topic: Flexible Demand Appliance Standards for Pool Controls

Docket Number: 23-FDAS-01  
TN Number: 250722

Dear Nicholaus Struven and the Flexible Demand Appliance Standards Unit,

This letter comprises the comments of the Pacific Gas and Electric Company (PG&E), San Diego Gas and Electric (SDG&E), and Southern California Edison (SCE), collectively referred to herein as the California Investor-Owned Utilities (CA IOUs), in response to the California Energy Commission 15-Day Proposed Regulatory Language for Flexible Demand Appliance Standards for Pool Controls.

The CA IOUs represent some of the largest utility companies, serving over 32 million customers in the Western U.S. We are committed to helping customers reduce energy costs and consumption while striving to meet their evolving needs and expectations. Therefore, we advocate for standards that accurately reflect the climate and conditions of our respective service areas.

We respectfully submit the following comments to the California Energy Commission (CEC).

**1. The CA IOUs appreciate the CEC’s revisions to the proposed flexible demand appliance standards for pool controls that align with recommendations in prior CA IOU comments.**

The CA IOUs appreciate the CEC’s efforts to revise the proposal for flexible demand appliance standards (FDAS) for pool controls to include recommendations put forth by the CA IOUs in previous comments on this topic. We support changes made to the proposal to strike the consumer product requirement from the overarching regulation scope and to specify a consumer product scope for pool controls. Additionally, we support the addition of definitions and requirements in alignment with the U.S. EPA ENERGY STAR® Specification for Pool Pumps Connected Product Criteria. We support the requirement for the use of open standards and bi-directional communication in connected devices, as well as the requirement for connected devices to be able to respond to user authorized remote requests and to be able to report power demand, with user consent.

**2. The CA IOUs do not support the addition of a requirement for pool controls to contain radio broadcast system receivers, and we request that the CEC remove the requirement from this rulemaking. This prescriptive requirement does not allow for the evolution of future broadcast methodologies as technology progresses. Furthermore, there is insufficient time**

**and limited information in the rulemaking documents for stakeholders to vet the new requirement.**

The 15-day proposed regulatory language for pool control FDAS includes a new requirement for pool controls to contain a radio broadcast system receiver. The addition of this requirement is a substantial change to this proposal for the 15-day public comment period. The given time period is insufficient for relevant stakeholders to fully vet the feasibility of this requirement, especially since as written, the proposed definition of radio broadcast data system receiver would apply to future FDAS for other appliances. We request that the CEC remove this requirement from this rulemaking.

Although radio broadcasting is briefly mentioned as a means of connectivity in the Final Staff Report,<sup>1</sup> the report does not provide sufficient information on the feasibility of using radio broadcasting for widespread transmission of demand flexibility signals in the future, where other connectivity options such as the internet or cellular connectivity are currently being used to provide demand flexibility information to appliances.<sup>2</sup> For example, the technical feasibility of using radio broadcasting to transmit demand flexibility information in the future may be affected by the ongoing transition from traditional analog radio to hybrid and digital radio signals with higher data rates that will be more suitable for ancillary uses like utility load management.<sup>3</sup> The Staff Report and Supplementary Staff Analysis do not clarify whether analog or digital broadcasting data will be required, or if the transition to digital radio signals and receivers could result in stranded assets if devices are installed with equipment that does not work with future radio broadcasting signals.

Additionally, the cost information for radio receiver chips provided in the CEC's Supplemental Staff Analysis would benefit from additional vetting. Unlike internet connectivity, which is already implemented in several pool control products on the market, no major manufacturers provide a pool control product that includes a radio receiver in addition to internet connectivity, so more analysis is needed to determine the full costs of adding this feature. A full cost analysis should also include consideration of the CA IOUs' cost to support demand flexibility signaling using radio broadcasting systems. Furthermore, the CEC has also not provided a means of verification to show that radio receivers can work as intended during pool equipment operation or that data can be received reliably in an environment with radio frequency noise, as variable-speed electric motors have been shown to interfere with radio frequencies.<sup>4</sup> Given this uncertainty, a test method for radio-enabled pool controls should be provided for products to demonstrate their ability to receive and act on data received via radio broadcast. Because redesigning products to ensure clear, repeatable receipt of radio signals in proximity to pool pump motors and other pool equipment may require costs that exceed the radio communication chip costs presented in the Supplemental Staff Analysis, the provided information is not sufficient to support the proposed radio receiver requirement.

Since the additional radio receiver requirement would add cost to FDAS-regulated appliances, and lacking analysis on the technical feasibility of this option, we request that the CEC remove the requirement for mandatory radio broadcast data system receivers from this rulemaking. In future appliance specific FDAS rulemakings, the CEC should explore communications options for customers

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<sup>1</sup> Radio Broadcast Data System is included in a list of connectivity standards in Table 2-2 (p. 23) of the Final Staff Report.

<sup>2</sup> For example, PG&E's existing WatterSaver program uses internet or cellular connectivity to deliver load sifting signals to electric storage water heaters.

<sup>3</sup> See the U.S. Federal Communications Commission's consumer guide on digital radio for more information.

<https://www.fcc.gov/consumers/guides/digital-radio>

<sup>4</sup> See Figure 31 – Severe Radio Interference from Variable-Speed Electric-Motor Drives

[https://www.arri.org/files/file/Technology/RFI%20Main%20Page/Naval\\_RFI\\_Handbook.pdf](https://www.arri.org/files/file/Technology/RFI%20Main%20Page/Naval_RFI_Handbook.pdf)

without internet or cellular connectivity and should more thoroughly justify the technical feasibility and cost-effectiveness of proposed options in published rulemaking documents.

### **3. The CA IOUs recommend changes to the proposed connectivity definitions and requirements.**

Regarding the “connected device” and “connected ready device” definitions, as noted in prior comments, we recommend addressing appliance connectivity separately for each appliance rather than setting requirements across all FDAS in the pool controls rulemaking. For example, the “connected device” definition specifies a requirement for wireless communication, but this requirement may not be universally applicable across all appliances as some appliances may use a wired connection for communication. The CEC could address this concern by limiting the definition in this rulemaking to “connected pool control” while addressing connectivity for other appliances in future rulemakings. The proposed “connected device” and “connected ready device” definitions could additionally be redrafted for clarity, for example, by removing the definition for “connected device” embedded within the “connected ready device” definition.<sup>5</sup>

The CA IOUs support the addition of requirements for open standards-based and bi-directional communication capability in the “connected device” definition. We also support the addition of requirements in section 1694 (Customer and Consumer Consent) that would ensure that communication features can be used to respond to remote signals and to transmit energy use information with user consent. While the proposed appliance specific flexible demand appliance standards for pool controls require both device connectivity and a default operating schedule, the appliance specific standards do not specify how pool controls should use the required connectivity for demand flexibility. The CEC should clarify the requirements within the appliance specific standards section to ensure that pool controls can use connectivity features to receive and respond to load management signals. As described in the Final Staff Report, pool controls control the operation of a variety of pool equipment including, but not limited to pool filter pumps. Section 1694 (Customer and Consumer Consent) states that connected appliances shall be capable of responding to authorized remote requests and reporting their own real-time power draw. Because pool controls operate a variety of pool equipment outside of the controls themselves, more clarity is needed beyond the language in the Customer and Consumer Consent section to explain if the control and reporting features would apply to just the pool control or also to equipment operated by the pool control, such as the pool filter pump. We recommend revising the appliance specific requirements to state that pool control connectivity should be capable of being used to respond to remote requests to modify the operation of equipment controlled by the pool control (e.g., the pool filter pump or heater) in response to changing conditions or load management signals, with consumer consent.

The CA IOUs support FDAS requirements for secure, bi-directional, reliable, and open-standard based communication that allows devices to receive and respond to demand flexibility signals from the CEC’s Market Informed Demand Automation Server (MIDAS) as well as utilities or authorized third parties. As noted in our prior comments, the CEC’s Load Management Rulemaking will require utilities to maintain up-to-date rate information in the new MIDAS database. The CEC should incorporate the Load Management Rulemaking’s requirements into FDAS, for example, by requiring FDAS-regulated devices (or devices via their manufacturer clouds) to connect to the MIDAS Application Programming Interface, download relevant rate schedules, greenhouse gas (GHG) signals, or price signals, and schedule device operation in response to those signals. The CEC could also consider a limited waiver process for FDAS

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<sup>5</sup> The “connected ready device” definition includes the statement that “a device including all hardware and software needed for connectivity is a connected device, even if the included hardware or software is separable or requires installation.”

that allows manufacturers of highly flexible pool controls to waive the appliance specific default operating schedule requirement (section 1693(b)(2)(C)) if the device or its software can connect by default to the MIDAS database, access the relevant rate schedule, dynamic price signal, or GHG signal for the customer, and schedule operation to avoid high demand processes during times with high electricity prices or high GHG emissions.

**4. Given the future ramifications of this rulemaking, the CA IOUs recommend that the CEC provide stakeholders with adequate time and information to vet the proposed regulations.**

The proposed regulatory language in the pool controls rulemaking will have ramifications for future FDAS since, as written, many sections in the proposed regulation will apply to all future FDAS. Therefore, it is critical that the CEC give relevant stakeholders sufficient time and information to properly vet the proposed FDAS. We request that the CEC update the Staff Report Analysis of Flexible Demand Standards for Pool Controls to reflect the changes to the regulation scope made throughout the rulemaking process so that stakeholders have access to the full justification for the proposed regulations.

As noted in our prior comments, future FDAS-regulated appliances will have different requirements than those proposed for pool controls, and definitions and general requirements for those appliances should be considered in future rulemakings. The CEC could simplify the regulation by limiting this rulemaking to pool controls and addressing requirements for other appliances in future rulemakings. This would allow relevant stakeholders the opportunity to engage more fully with the standards development process.

**5. The CA IOUs recommend additional changes to the proposed regulatory language to increase clarity and support regulation enforceability.**

We offer the following recommendations to improve regulation clarity.

The revised “pool control” definition in section 1691(b) departs from the prior definition described in the Final Staff Report, which specified that “Staff defined the scope to include devices that control the pool filter pump and at least one other piece of electric pool equipment like the electric pool heater, pressure cleaner booster pump, or chlorinator” (Final Staff Report, p. 45). The revised definition states that pool controls “may,” but are not required to, control other equipment – implying that pool controls integral to a pool pump that do not control other equipment are now within scope. The Staff Report and Supplemental Staff Analysis do not discuss why the scope has been redefined to now include pool controls that only control the pool pump given prior industry technical feasibility concerns for health and safety if pump operations change without corresponding changes to equipment operations downstream of the pump. We recommend reverting to the definition of pool controls described in the Final Staff Report or otherwise providing clarity on the feasibility of regulations using the expanded definition.

The revised regulatory language includes a new requirement for pool controls to support local setup “via a user interface” in section 1693(b)(2)(B)(2). Since pool controls will be required to have connectivity features, the additional requirement for a local user interface will not be appropriate for all pool control products, and the CEC has not demonstrated the necessity of this new requirement. The requirement may add unnecessary additional costs for consumers, as some products rely on an application or cloud-based user interface for product setup making the additional local interface redundant. We recommend revising the requirement to allow for both local and remote setup options for pool controls.

Throughout the proposed regulatory language, “customer” and “consumer” are used inconsistently including the use of both terms in some sections and the use of one term or the other in other sections

of the regulation. We recommend clarifying the language to use standardized terminology as appropriate for the regulation throughout.

In several instances (e.g., within requirements for Cybersecurity, Customer and Consumer Consent, and Data Submittal – Table A-2) the proposed standard includes requirements for “connected devices” but no similar requirements are listed for “connected ready devices.” The regulatory language should be updated to include similar requirements for “connected ready devices” to follow when they are connected to ensure that these devices meet the same standard as connected devices.

We recommend changes to the proposed regulatory language to address typographical errors, add missing references, and ensure internal consistency between sections (e.g., requirements in Table A-1 and Table A-2 use different wording than the corresponding requirements in other sections of the proposed regulatory language). The appendix to this letter contains a table of additional recommended editorial changes to the proposed regulatory language.

The CA IOUs appreciate the opportunity to provide these comments regarding the CEC Rulemaking on Flexible Demand Appliance Standards for Pool Controls. We thank the California Energy Commission for its consideration. We look forward to the next steps in the process.

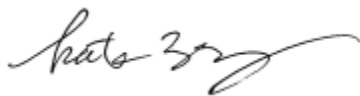
Sincerely,



Patrick Eilert  
Manager, Codes & Standards  
Pacific Gas and Electric Company



Christopher Malotte  
Sr. Manager, Codes and Standards  
Southern California Edison



Kate Zeng  
ETP/C&S/ZNE Manager  
Customer Programs  
San Diego Gas & Electric Company

## Appendix: Recommended Editorial Changes to the Proposed Regulatory Language

Section	Text	Proposed Change
1691(a)	“Load-serving entity”	Align definition with the definition listed in Senate Bill 49 (2019).
1691(a)	“Open standards”	Align definition with U.S. EPA ENERGY STAR Specification for Pool Pumps Connected Product Criteria. <sup>6</sup>
1691(a)	“Personal information”	Align definition with existing privacy definition in the California Consumer Privacy Act, i.e., California Civil Code 1798.140 (v), or reference existing definition as source.
1691(a)	“Security feature”	Clarify if the data referred to in this definition includes “personal information” as defined above.
1691(b)	“Direct load control switch”	Remove “clock operated switch” distinction to allow for cloud-based control and include pool control in the definition name to differentiate from other direct load control switches.
1691(b)	“Integral”	Definition lacks clarity by redefining commonly used term and using the term itself within its definition. Remove definition as it is not used in the regulation.
1691(b)	“Pool equipment”	Change “pool pumps” to pool filter pumps” to match other usage of this term.
1691(b)	“Pool pump switch”	Remove “clock operated switch” distinction to allow for cloud-based control.
1692(c)(4)	“Authentication”	Add reference to NERC standard for “NERC password strength requirements.”
1694(b)	“similar to consumer controllable functions on the appliance.”	Strike language for clarity.
1694(b) to 1694(e)	“authorized remote requests”	Clarify that authorized remote requests would include requests to start, stop or change operation or schedule as well as notifications of conditions (e.g., peak electricity prices or GHG emissions) that the device could use for operational scheduling decisions.
1696, Table A-1	Permissible Answers	Remove “false” as a permissible answer where not permissible. For example, where all devices are required to be connected or connected ready, a submission of “false” would not comply with the regulation.

<sup>6</sup> See page 7-8 of the U.S. EPA ENERGY STAR Specification for Pool Pumps, Version 3.1.  
<https://www.energystar.gov/sites/default/files/asset/document/ENERGY%20STAR%20Version%203.1%20Pool%20Pumps%20Final%20Specification.pdf>