DOCKETED	
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Flexible Demand Appliance Standards for Pool Controls

Title 20, Sections 1690 - 1697

Response to Comments

45-Day comment period: February 24 – April 10, 2023

Public Hearing: April 11, 2023

First 15-Day comment period: June 23 – July 10, 2023

Second 15-Day comment period: September 1 – 18, 2023

TN#	Author	Comment	Response
249066	**SkyCentrics** 3/8/2023 **45-Day Comment Written** Tristan de Frondeville Founder & CEO, SkyCentrics Berkeley, CA	**1.** The first mention of smart grid or open standards is on page 17. Ironically, it is the first in the list of "Data Submittal Requirements" but there is no mention of WHICH Smart Grid Open Standards in which the commission has an interest? But as the first item in the list, it seems important, so shouldn't the commission list smart grid open standards in which it is interested in having the OEM participate? The original 2022 release of this rulemaking spoke about the schedule and also about how there would be open standard communication to the pool control. But, as we discussed in our initial comments on the rulemaking, the open standard communication mentioned in the 2022 document was TCP/IP, which as SkyCentrics submitted at the time, was not a very useful open standard since it allowed communication, but it allowed every OEM to have a different instantiation of the language/protocol that they would use, and the smart grid signals and responses that they might implement, which would create a Tower of Babble situation, as opposed to an open standard which creates common language/protocols and common signals and responses.	**1.** Comment acknowledged, and some changes were made. Staff agrees with this comment in part and in response to it added a definition of “open standards” to section 1691(a) in the regulatory language proposed in the first 15-day notice. Staff appreciates the other comments and the examples provided by the commenter. However, staff is following the development of several communication pathways and has determined that at least for now, given the dynamic nature of this communication technology, it is best to remain technology neutral in the regulation and permit the use of communications devices that possess an acceptable minimum communication ability. Accordingly, the regulatory language was amended in the first 15-day notice to include a list of open standards but does not designate one standard in particular.

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249066	**SkyCentrics** 3/8/2023 **45-Day Comment Written** Tristan de Frondeville Founder & CEO, SkyCentrics Berkeley, CA	**2.** All of this sequence of efforts to create a grid-responsive load in OEM equipment has already occurred with water heaters over the last 10 years. And they ended up implementing an open standard hardware port as the best solution. Why the best? Because: You guarantee a minimum signal response in all OEM equipment and the ability to communicate to that equipment for its entire life, guaranteed You guarantee communication path flexibility (wifi, cellular, Lora, powerline carrier, ethernet, etc.). This is critical because some electric loads are big enough that they require guaranteed access such as that provided by cellular, but other times, the instability but free cost of a wifi connection may be suitable. You guarantee competitive access to the load. The biggest concern that we have about the current rulemaking is that it (a) focuses on a default schedule that is not easy for pool control vendors to implement in their distribution channels because different states will have different default schedules, and (b) it gives the OEMs the ability to monopolize access to the load because the only access to the load they may have to provide is their own cloud through which they will have monopoly control, with all the inherent issues around monopolies. You guarantee the lowest cost method to replace a vendor that is charging too much to access that load. The biggest concern that we have about the current rulemaking is that it (a) focuses on a default schedule that is not easy for pool control vendors to implement in their distribution channels because different states will have different default schedules, and (b) it gives the OEMs the ability to monopolize access to the load because the only access to the load they may have to provide is their own cloud through which they will have monopoly control, with all the inherent issues around monopolies.	**2.** Comment acknowledged and no change made. Staff incorporates its response to commenter's previous comment by reference here. Staff appreciates the comments and the examples provided by the commenter. Staff is following the development of several communication pathways but for now staff will remain technology neutral in the regulation provided that the device possesses an acceptable minimum communication ability. Staff agree that implementing FDAS might not be easy for all pool control vendors to implement but pool control manufacturers are very innovative and have multiple solutions for compliance with a default schedule requirement. Staff agree that under some circumstances access to appliance load using the OEM cloud could result in a monopoly control and staff are monitoring the topic, however this is currently not the case for pool control manufacturers since they openly allow other manufacturers to control and interface with their product lines. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
249549	**Clark W Gellings** 4/5/2023 **45-Day Comment Written** Clark W. Gellings, P.E. 3431 Oak Lane, Morgan Hill, CA 95037 clark.gellings@gmail.com	**1.** 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.	**1.** Comment acknowledged, and no changes made.

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249549	**Clark W Gellings** 4/5/2023 **45-Day Comment Written** Clark W. Gellings, P.E. 3431 Oak Lane, Morgan Hill, CA 95037 clark.gellings@gmail.com	**3.** The Commission faces a difficult challenge in creating both "General Requirements" section 169.2 and "Appliance Specific Standards section 169.3. The difficulty is 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. **4.** 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).	**3.** Comment acknowledged, and no changes made. Staff agree with the commenter that there are some flexibility challenges that come with the adoption of standards. Staff agree with the commenter that eventually dynamic pricing will become a significant consideration for consumers and standards development, but it currently is not deployed widely in the electricity markets. CEC staff appreciates the comments and the examples provided by the commenter. Staff plan to closely monitor the first flexible demand standards and may update the standards for clarity or enhanced flexibility to accommodate dynamic pricing once it becomes available. No specific changes to the regulatory language were made in response to this comment as it essentially does not request any. **4.** Comment acknowledged, and no changes made. Staff agree with the commenter that new pool pumps and related equipment should be safe and comply with the National Electric Code and NFPA standards but staff has determined that these requirements are imposed through building standards and therefore it is not necessary duplicate them here. Staff will monitor pool control equipment that is offered for sale in California and will consider requiring electrical devices be labeled by a National Recognized Testing Laboratory, but these are also building code requirements that need not be duplicated here. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
249582	**Pool & Hot Tub Alliance** 4/10/2023 **45-Day Comment Written [underline and strikeout as presented in comment]** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**1.** … we offer the following suggested edits to the February 23, 2023, proposed regulatory language as follows: Definitions, Section 1691(b) Modifying as follows: "Pool control" and "pool controls" mean any component or group of components, including software, that: For integral dedicated purpose pool pump controls, has the capability to independently schedule the operation and/or control the start or stop times of a pool filter pump and other pool equipment, and uses single-phase AC power as input power; For other than integral dedicated purpose pool pump controls, has the capability to independently schedule the operation and/or control the start or stop times of a pool filter pump, and uses single-phase AC power as input power; or Includes, but is not limited to, a pool timer, pool pump switch, heater switch, or direct load control switch. ~~Has the capability to start or stop the operation of a pool filter pump and other pool equipment, and Uses single-phase AC power as input power.~~ "Pool control" and "pool controls" exclude controls marketed exclusively for uses as a control for pool filter pumps with a rated hydraulic horsepower (hhp) greater than 2.5 hhp. "Pump Priming" means an operation that initiates water circulation by pulling water from the pool into the pool circulation system ~~with a duration time less than or equal to 15.0 minutes.~~	**1.** Comment acknowledged and accepted. Staff agrees with this comment for the reasons stated in the comment and in response to it modified the definition of "pool controls" in section 1691(b) in the regulatory language proposed in the first 15-day notice. Staff appreciates the comments. In addition, staff modified the proposed language to remove the time requirement for pump priming.

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249582	**Pool & Hot Tub Alliance** 4/10/2023 **45-Day Comment Written [underline as presented in comment]** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**2.** Add new definitions as follows: "Direct load control switches" means a clock operated switch device that has the capability and is used to start or stop the operation of a pool filter pump and/or electric pool heater, and uses single-phase AC power as input power. "Heater switch" means a clock operated switch device that has the capability and is used to start or stop the operation of an electric pool heater, and uses single-phase AC power as input power. "Integral dedicated purpose pool pump control" means a pool pump control provided as an integral part of a dedicated purpose pool pump control supplied as an integral part of a dedicated purpose pool pump or a replacement dedicated purpose pool pump motor that controls the pool pump motor. A user interface or a user interface that is sold separately, that controls the pool pump motor; or an integral dedicated purpose pool pump control that is capable of being removed from a dedicated purpose pool pump or a replacement dedicated purpose pool pump motor for remote mounting; is an integral dedicated purpose pool pump control. "Pool pump switch" means a clock operated switch device that has the capability and is used to start or stop the operation of a pool filter pump, and uses single-phase AC power as input power. "Pool timer" means a clock operated device that has the capability and is used to start or stop the operation of a pool filter pump and/or electric pool heater, and uses single-phase AC power as input power. "Replacement dedicated purpose pool pump motor" means an electric motor that: is single-phase or polyphase; has a dedicated purpose pool pump motor total horsepower of less than or equal to 5 horsepower; is marketed for use as a replacement motor in self-priming pool filter pump, non-self- priming pool filter pump, or pressure cleaner booster pump applications; and excludes polyphase replacement dedicated-purpose pool pump motors capable of operating without a drive, and is sold or offered for sale without a drive that converts single-phase power to polyphase power.	**2.** Comment acknowledged and accepted. Staff agrees with this comment for the reasons stated in the comment and in response to it added definitions for "direct load control switch", "heat switch", "integral dedicated purpose pool pump control", "pool pump switch", "pool timer" and "replacement dedicated purpose pool pump motor" in section 1691(b) in the regulatory language proposed in the first 15-day notice. Staff appreciates the comments.

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249582	**Pool & Hot Tub Alliance** 4/10/2023 **45-Day Comment Written** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**2a.** The modifications being suggested to the definition of "pool control" or "pool controls" is to better align the regulatory language with what we believe is the intent of the CEC staff report, in terms of what products are in and out of scope. The current language is not entirely clear, and it is imperative that what is intended to be in or out of scope be well-defined to those who must meet the regulatory requirements. **2b.** Based on the proposed modifications to the definition of a "pool control", PHTA is suggesting several new definitions be included to ensure these products are clearly defined as well, to alleviate any misinterpretation of what is being required. This includes clarifying the different types of products that are considered an "integral dedicated purpose pool pump control" to alleviate any possible confusion. Then the "replacement dedicated purpose pool pump motor" definition comes directly from the CEC Replacement Pool Pump Motors regulation adopted on January 1, 2021. **2c.** Lastly, the suggested modification to the definition of "pump priming" is due to our belief that the time limitation should be provided within the specific default schedule requirements and not within the definition itself, as pump priming time can vary by pool. The intent of the definition should be to define what "pump priming" is but not include a subjective number within the definition. We refer you to our appliance specific standard comments where we add back in a time limitation.	**2a.** Comment acknowledged and accepted. Staff incorporates its responses to PHTA comments 1 and 2 above by reference here. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language in the 15-day comment process. **2b.** Comment acknowledged and accepted. Staff incorporates its responses to PHTA comments 1 and 2 above by reference here. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language in the 15-day comment process. **2c.** Comment acknowledged and accepted, but subsequent changes to text make comment moot. Staff incorporates its responses to PHTA comments 1 and 2 above by reference here. Staff appreciates the comments but decided to eliminate the pump priming requirement from section 1692(b)(2)(C) which renders a definition of "pump priming" unnecessary.

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249582	**Pool & Hot Tub Alliance** 4/10/2023 **45-Day Comment Written [underline and strikeout as presented in comment]** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**3**. Cybersecurity, Section 1692(c) Suggest the following modifications: Data Protection. The connected device shall provide for consumer data protection ~~not display the credential and personal data in plaintext on the user interface~~. Passwords. The connected device shall contain a password security feature~~ that requires a user to generate a new means of authentication before access is granted to the device for the first time, and shall support the use of passwords meeting the NERC password strength requirements listed below: Each password shall be a minimum of six characters. Each password shall consist of a combination of alpha, numeric, and special characters~~. Reasoning: PHTA members believe these requirements as provided in the proposed regulation are too prescriptive for the intended scope of this regulation. We suggest that the CEC simply indicate that devices are required to include provisions for data and password protections and leave specifics up to manufacturers. This will allow for greater product development and new technologies. Suggest the following modifications: Software Update. The manufacturer shall have an update policy that informs the consumer how the manufacturer will support software updates and informs the consumer that the device is capable of being updated whenever new vulnerabilities are discovered.~~ On initial connection to the internet, the connected device shall attempt to receive update notice from the manufacturer's update service and attempt to download, verify, and apply any available patches.~~ The manufacturer shall provide an estimated security expiration date or end of life policy that informs the consumer when the manufacturer will be discontinuing the connected ready device support. Reasoning: Manufactures should be allowed to maintain their own software update policies. Providing too specific of requirements can stifle innovation and limit development that may produce new ways to offer software updates. At a minimum we suggest removing (5)(A) as it is not always best practice to do this upon initial connection.	**3.** Comment acknowledged and some changes made. Staff agrees with this comment in part and modified the "data" and "software update" provisions in section 1692(c) in the first 15-day notice for the reasons stated in the comment. Staff also eliminated the reference to the NERC, but retained the criteria for passwords because staff has determined passwords are essential to ensuring security, which is a concern across devices and therefore should be uniform across manufacturers.

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249582	**Pool & Hot Tub Alliance** 4/10/2023 **45-Day Comment Written [underline and strikeout as presented in comment]** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**4**. Suggest the following modifications: Override Function. The connection device shall allow consumer to change the event responses and connected device event response settings at any time. Reasoning: There are some device settings that should only be allowed to be changed by a pool professional or manufacturer, and not the consumer. This is due to both safety and product liability. Therefore, the suggested edit is intended to clarify that the consumer can only override demand response settings and not all settings. **5.** Suggest the following modification: (1) Pool controls shall meet the flexible demand appliance standards, testing, marking, and cybersecurity requirements enumerated in this section no later than three ~~one~~ years after they are adopted or updated. Reasoning: Initially, CEC began discussions on flexible demand pool controls simply needing a default schedule and requiring that the products be connectable. As work on the proposed regulations continued, additional requirements were included that simply will require additional time for product development and design, i.e., cybersecurity items. The current proposal that pool controls must meet the flexible demand appliance standards no later than one year after they are adopted is simply not feasible. Twelve months is not adequate due to numerous factors: continued supply chain efforts for electronics, management of inventory levels, and software development time and testing. PHTA members cannot commit to be able to meet the current proposed regulation compliance window due to development resources and electronic chain constraints. Based on input received from our manufacturers, three years is needed between effective date and when compliance is required. We strongly urge the Commission to consider this request in order to have adequate product on the market.	**4.** Comment acknowledged and accepted. Staff agrees with this comment and added "event response" to the "override" provision in section 1692(c)(8) in the first 15-day notice for the reasons stated in the comment. Staff agrees that it would not be appropriate to require that consumers be allowed to change all the connected device's settings for the reasons stated in the comment, but it is appropriate for them to be able to override the devices' event response settings. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language. **5.** Comment acknowledged and some changes made. Staff agrees with this comment in part and modified the "effective date" provision of section 1693(b)(1) to require that pool controls manufactured after September 29, 2025, meet the standard, for the reasons stated in the comment. This will give manufacturers almost two years after the CEC adopted the regulations to comply, which staff has determined is a reasonable compromise that balances the interests served by the regulation with the reasons advanced by the commenter.

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249582	**Pool & Hot Tub Alliance** 4/10/2023 **45-Day Comment Written [underline as presented in comment]** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**6**. Suggest the following modification: 2. Pool controls shall support both local and remote setup, selection, and update of its operating schedule. Local and remote setup, selection, and update shall be possible through a user interface or through a smart device app via WiFi or BlueTooth or other connected means." Reasoning: The local set up should also include smart device apps due to the fact not all devices have user interfaces that allow control of all settings. **7.** Pump Priming clarification in Section (2)(C)1.c. Suggest the following modification: c. automatically operate the pool filter pump at 50 percent of the maximum operating speed of the pool filter pump or less during all remaining hours and may perform pump priming at any time with a duration time less than or equal to 30.0 minutes. Reasoning: The amount of time it takes to properly prime a pump is specific to the amount of lift needed for that specific pump. Some pumps are required to climb five, eight or ten feet. We appreciate the limitations the Commission is looking to achieve, but the 15 minutes proposed is not adequate. More time is needed to provide leeway with all the types of pumps and pools that exist; 30 minutes is a more reasonable maximum number to be provided within the factory default schedule. This change to 30 minutes should also limit the number of pool owners that will simply adjust the time, if longer is needed to properly prime their pump.	**6.** Comment acknowledged and accepted. Staff agrees with this comment for the reasons stated and modified the "Clock" provisions in section 1692(b)(2) in the first 15-day notice for the reasons stated in the comment. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language. **7.** Comment acknowledged and accepted. Staff agrees with this comment for the reasons stated and eliminated the 15-minute pump priming definition in section for the reasons stated in the comment. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language.

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249584	**California Investor Owned Utilities** 4/10/2023 **45-Day Comment Written** 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	**1.** The CA IOUs acknowledge CEC's efforts to establish flexible demand appliance standards (FDAS) that reduce greenhouse gas (GHG) emissions. We encourage the CEC to explore flexible demand capabilities that enable appliance communication with local utilities or third parties to harmonize with the grid, while reducing GHG emissions. The CA IOUs acknowledge CEC's efforts to implement the statutory requirements for flexible demand appliance standards within a broader statewide energy policy framework enabling progress toward a 100% clean electricity supply that reduces GHG emissions. Senate Bill 49 (SB 49) defines flexible demand as the ability to "schedule, shift, or curtail [demand] through direct action by the customer or through action by a third party, the load-serving entity, or a grid balancing authority, with the customer's consent." This legislation states that FDAS should prioritize appliances with electrical demand "controlled by load-management technology and third-party load-management programs." Appliances can provide various demand flexibility services, including the ability to "shape, shift, shed, and shimmy" loads to support grid needs. To better align with SB 49 and provide more benefits to California consumers and the grid, we urge the CEC to prioritize appliance flexible demand capabilities such as dispatchability, third-party communication with utilities and aggregators, and the ability to shed, shift, and modulate demand in response to grid needs, in addition to the goal of reducing GHG emissions. These additional appliance characteristics support a balanced and reliable grid as California moves toward increasing renewable generation and are essential to realizing the goal of GHG emissions from FDAS. The proposed standard for pool controls does not ensure customer devices can receive and act on signals, such as dynamic energy prices, GHG signals, and demand response event information. We recommend the CEC collaborate with utilities, manufacturers, regulatory agencies, and other stakeholders (e.g., aggregators) to develop processes to transmit rate and demand response information to flexible appliances, ensuring that customers receive relevant information based on their rate schedule, location, and class.	**1.** Comment acknowledged and no changes made. Staff agrees with this comment in part and disagrees with it in part. SB 49 (Public Resources Code (PRC) section 25402(f)(7)) authorizes the CEC to adopt flexible demand standards that empower customers or other entities with customers' consent to flex their electricity use. The statute also provides a wide list of factors for CEC to consider in prioritizing candidate appliances to be subjected to flexible demand appliance standards (FDAS). (PRC section 25402(f)(5).) The pool controls rulemaking falls squarely within these parameters and is entirely authorized by and consistent with SB 49. As noted at page 5 of the Final Staff Report, Analysis of Flexible Demand Standards for Pool Controls, February 2023 | CEC-400-2023-001 (Final Staff Report) supporting this rulemaking: "The staff proposal for pool controls is a first step by the CEC implementing its authority under Senate Bill 49 to encourage the deployment of flexible demand technologies. As the CEC continues this important work, the intent is to transform the marketplace, allowing for innovation by industry to further develop load flexibility resources, reduce greenhouse gases, and advance energy sustainability and grid reliability." In any event, the proposed regulation would require pool controls to be "connected devices" (section 1693(b)(2)) meaning that they must "wirelessly communicate via open standards with entities outside the device by means of integrated or separate communications hardware or software. A device that is able to receive but not send communication is not a connected device." (Section 1691(a)).

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249584	**California Investor Owned Utilities** 4/10/2023 **45-Day Comment Written** 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	**2.** CEC's FDAS should harmonize with other CEC efforts, such as the Load Management Rulemaking and the recently created Market Informed Demand Automation Server (MIDAS) database. The CEC recently completed the Load Management Rulemaking. This rulemaking created the California Market Informed Demand Automation Server (MIDAS) database and will require utilities to maintain up-to-date rate information in MIDAS. The CEC should consider the outcome of this rulemaking when developing FDAS. For example, CEC could require FDAS devices or their manufacturer clouds to connect to the MIDAS Application Programming Interface (API), download relevant rate schedules, GHG signals, or price signals, and schedule device operation in response to those signals. If the CEC does not incorporate these capabilities into the proposed pool control FDAS, at a minimum, the CEC should remain receptive to future amendments to the pool control FDAS to leverage MIDAS data. The CEC may also consider a limited waiver process for FDAS 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 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 prices or high GHG emissions. **3.** The CA IOUs recommend clarifying the proposed regulatory language to differentiate requirements intended for all FDAS appliances from those that apply solely to pool controls. The proposed regulatory language contains sections that would, as written, apply to all flexible demand appliance standards. Given that the CEC published this proposed regulatory language in the context of the pool controls rulemaking, we recommend limiting this rulemaking to pool controls and moving the relevant proposed regulations to the pool control-specific sections. Future FDAS appliances will have different requirements than those proposed for pool controls and definitions (e.g., on connectivity) and general requirements for those appliances should be considered in future rulemakings. This could be achieved by organizing requirements in the Scope, Definitions, General Requirements, and Appliance Specific Requirements sections by appliance type and including only requirements common to all appliances as "general" requirements within these sections.	**2.** Comment acknowledged and no change made. Staff incorporates its response to the prior CA IOU comment 1 by reference here. CEC is receptive to future amendments to leverage MIDAS data for the pool controls FDAS. Since the amendments require pool controls to be connected devices, they will be able to access the MIDAS database either directly or by utilizing a third party service provider. See: https://www.energy.ca.gov/proceedings/energy-commission-proceedings/inactive-proceedings/market-informed-demand-automation **3.** Comment acknowledged and no changes made. Staff disagrees with this comment and has determined that the proposed regulatory language appropriately and clearly differentiates between requirements that apply to FDAS generally and those that apply to pool controls specifically. Following this comment would result in adopting needlessly duplicative regulatory language in each particular FDAS rulemaking because there are definitions, testing, marking and enforcement provisions that appropriately apply to FDAS across the board, as described in the staff report. Staff used language to better align with ENERGY STAR specifications, however, staff determined an optional pathway via a waiver process would add unnecessary complexity, is not a simple approach and, considering the burdens of administering it, would not advance the goals of the program.

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249584	**California Investor Owned Utilities** 4/10/2023 **45-Day Comment Written** 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	**4.** The CA IOUs recommend changes to the Scope requirements of the proposed regulatory language. Section 1690 (Scope) applies broadly to all FDAS, not just to pool controls. The proposed scope is limited to consumer products, which is appropriate for pool controls given the health and safety requirements of commercial pools. However, it may be appropriate for future FDAS to apply to commercial or industrial products, so restricting the scope of FDAS to just consumer products will not be suitable. We recommend striking the consumer product requirement from the overarching scope and creating a pool controls specific scope section that states that the pool control regulation is limited to consumer products. In support of this recommendation and others in this letter, a table of recommended changes to the proposed regulatory language is included in an appendix. **5.** The CA IOUs recommend changes to the Definitions in the proposed regulatory language. We recommend changes to the "Connected Device" definition in section 1691(a). The current language would apply this definition to all FDAS, not just pool controls. Moreover, the text's ambiguity may invite multiple interpretations. The definition should be clarified to remove extraneous language and enhance clarity and enforceability, e.g., "with or without" certain connections or "by means of integrated or separate" equipment.	**4.** Comment acknowledged and accepted. Staff agrees with this comment for the reasons stated and made this change via the first 15-day notice. The consumer products reference was removed from section 1690(a), the general scope provision and was added to section 1690(a)(1), the scope provision specific to pool controls. Future FDAS rulemakings may apply to devices that are not consumer products. To make this clear, CEC staff removed "as consumer products" from the more general scope section of subsection (a) and added it to subsection (a)(1) for pool controls, which are now defined as "Pool controls that are consumer products designed to use single-phase AC power as input power." This responds to stakeholder comments and sets the desired scope for this rulemaking without restricting future FDAS rulemakings only to devices that are consumer products. **5.** Comments acknowledged and accepted. Staff agrees with these comments for the reasons stated and made the suggested changes via the first 15-day notice. Staff appreciates the comments and incorporated the suggested edits to the connected device definition into an update of the proposed regulatory language. Section 1691 now defines "Connected device" as "any device that can wirelessly communicate via open standards with entities outside the device by means of integrated or separate communications hardware or software. A device that is able to receive but not send communication is not a connected device." Section 1693(b)(2) requires pool controls to be "connected device[s]". Section 1691(a) defines "Open standards" as "standards adopted or published, individually or jointly, by one or more of the following organizations: the National Institute of Standards and Technology (NIST), American National Standards Institute (ANSI), International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), International Telecommunication Union (ITU), Institute of Electrical and Electronics Engineers (IEEE), or Internet Engineering Task Force (IETF)."

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249584	**California Investor Owned Utilities** 4/10/2023 **45-Day Comment Written** 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	**5a.** Additionally, we recommend that the CEC create a specific definition for connected pool controls to require integrated connectivity at the time of sale rather than allowing "separate" equipment to provide this feature. Moving beyond the current connectivity definition, we would support a connectivity definition that requires devices to have two-way communication capability (i.e., both sending and receiving information) between the consumer and the grid, utility, or aggregator, instead of just the ability to receive signals via one-way communication. Furthermore, the definition should focus on functionality requirements, allowing connectivity via other open and secure protocols that exist today and that may exist in the future rather than TCP/IP compatibility. If the "TCP/IP signal" requirement is maintained, we recommend revision to add detail and clarity.	**5a.** Comments acknowledged and accepted. Staff agrees with these comments for the reasons stated and made the suggested changes via the first 15-day notice for the reasons stated in the comment. Staff appreciates the comments and incorporated the suggested edits to the connected device definition into an update of the proposed regulatory language. Staff incorporates its response to comment 5 above by reference here.

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249584	**California Investor Owned Utilities** 4/10/2023 **45-Day Comment Written** 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	**5b.** Additionally, we recommend other changes to the definitions in section 1691 of the proposed regulatory language. To support a requirement for communication based on open and secure standards that enable demand flexibility, we suggest adopting the "open standards" and "communications" definitions from the United States EPA ENERGY STAR® Specification for Pool Pumps Connected Product Criteria, which could be extended to pool controls. In accordance with SB 49, which states that CEC's FDAS should prioritize interoperable and open-source appliances, we propose that communication requirements should be based on open and secure standards and allow for several operational pathways including device control by third-party aggregators enabled by cloud-to-cloud communication between aggregators and utility distributed energy resource or demand response management systems. The ENERGY STAR specification has been vetted by a wide variety of stakeholders, and alignment with this specification would strengthen the FDAS for pool controls by promoting device dispatchability and allowing connectivity and communication requirements to remain flexible for future innovation. At least two brands offer connected pool pumps that are ENERGY STAR-compliant and could therefore also comply with FDAS without additional effort. The software-based communications costs of ENERGY STAR connected pool pump requirements may be similar to the incremental cost of the CEC's current proposal. The ENERGY STAR specification uses open standards for communication, meeting the SB 49 requirement to prioritize interoperable and open-source appliances. Section 4.3 of this specification also includes provisions to allow for remote management of devices and to provide feedback to consumers on device operation, aligning with the SB 49 requirement to prioritize appliances with "a user-friendly interface" and a "straightforward setup and connection process, such as remote setup by means of an internet website or application." The ENERGY STAR requirements further protect the consumer compared to the proposed FDAS TCP/IP connectivity requirement, which does not ensure the use of open standards. Aligning the proposed regulation with ENERGY STAR requirements could result in additional benefits compared to the CEC proposal. If revisions are made to the proposed regulatory language, we recommend striking from the proposed regulatory language definitions no longer needed to support the pool controls regulation. Predicting future general requirements is difficult, so we recommend restricting the definitions in this standard to only those necessary for pool controls. If it is necessary to move some of the regulatory language into a "general" section after the adoption of more FDAS regulations, those changes could be made at the time of the new regulation.	**5b.** Comments acknowledged and accepted. Staff agrees with these comments for the reasons stated and made the suggested changes via the first 15-day notice. Staff appreciates the comments and incorporated the suggested edits to the connected device definition into an update of the proposed regulatory language. Section 1691 now defines "Connected device" as "any device that can wirelessly communicate via open standards with entities outside the device by means of integrated or separate communications hardware or software. A device that is able to receive but not send communication is not a connected device." Section 1693(b)(2) requires pool controls to be "connected device[s]". Section 1691(a) defines "Open standards" as "standards adopted or published, individually or jointly, by one or more of the following organizations: the National Institute of Standards and Technology (NIST), American National Standards Institute (ANSI), International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), International Telecommunication Union (ITU), Institute of Electrical and Electronics Engineers (IEEE), or Internet Engineering Task Force (IETF)." This better aligns the regulation with the Energy Star Program.

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249584	**California Investor Owned Utilities** 4/10/2023 **45-Day Comment Written** 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	**6.** The CA IOUs recommend changes to the General Requirements of the proposed regulatory language. We recommend the CEC clarify the Cybersecurity requirements in section 1692 (General Requirements). These requirements refer to "state laws relating to reliability and cybersecurity" and North American Electric Reliability Corporation's (NERC) Critical Infrastructure Protection standards. However, the requirements do not cite statutes or specific standards and do not incorporate documents by reference. Additionally, we recommend revisions to the password requirement. Recommended revisions are noted in the appendix table.	**6.** Comment acknowledged and some changes made. Staff agrees with these comments for the reasons stated and made the suggested changes via the first 15-day notice. Section 1692(c)(3) now provides, "The connected device shall provide customer or consumer data protection for any and all collected personal information, consistent with state and federal law." The first 15-day notice amended Section 1692(c)(4) to provide, "The connected device shall contain a security feature that requires a user to generate a new means of authentication before access is granted to the device for the first time, and if a plain text-based password is used it shall support the use of passwords meeting the NERC password strength requirements listed below: (A) The device shall support passwords shall be a minimum of six characters or longer. (B) The device shall support passwords that consist of a combination of alpha, numeric, and special characters." Staff appreciates the comments and incorporated the suggested edits to clarify cybersecurity requirements into an update of the proposed regulatory language. Staff does disagree with the comment regarding the need to incorporate the NERC standards by reference. The current language in section 1692(c) is sufficient and complies with the language in PRC section 25402(f)(2).

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249584	**California Investor Owned Utilities** 4/10/2023 **45-Day Comment Written** 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	**7.** The CA IOUs recommend changes to the Appliance Specific Requirements for pool controls in the proposed regulatory language. We recommend changes to the requirements for pool controls in section 1693 (Appliance Specific Requirements). For section 1693(b)(2)(A), we recommend a pool controls specific connectivity definition. For pool controls the connectivity functionality should be required to be integrated into the device rather than be enabled by "separate" equipment. Furthermore, adding a requirement that pool controls be able to communicate using open and secure standards would strengthen the regulation. The CEC could align with the publicly vetted ENERGY STAR Specification for Pool Pumps Connected Product Criteria, incorporating this communication as a mandatory requirement or as an optional pathway via a waiver process.	**7.** Comment acknowledged and some changes made. Staff agrees with this comment in part and disagrees with it in part. Staff incorporates its responses to CA IOU comments 1, 3, 4 and 5 above by reference here. Staff appreciates the comments and incorporated some of the suggested edits into an update of the proposed regulatory language. Section 1693(b)(2) now contains a communication requirement specific to pool controls. Staff disagree with a requirement that only allows for connectivity to be integrated into the device and are allowing for product design options to have the connectivity component reside integral to the device or in separate equipment. Section 1691(a) now aligns with the ENERGY STAR specification by defining "Open standards" as "standards adopted or published, individually or jointly, by one or more of the following organizations: the National Institute of Standards and Technology (NIST), American National Standards Institute (ANSI), International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), International Telecommunication Union (ITU), Institute of Electrical and Electronics Engineers (IEEE), or Internet Engineering Task Force (IETF)."

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249584	**California Investor Owned Utilities** 4/10/2023 **45-Day Comment Written** 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	**7a.** For section 1693(b)(2)(B) on clock requirements, we recommend adding a requirement for pool controls to use their connectivity to sync with local time without using a separate device. The proposed regulatory language requires that pool controls that communicate with a separate device "have the ability to automatically synchronize their system clock to the local time specified by that device." However, there is no explicit requirement to sync with local time for pool controls with integrated connectivity that do not communicate with a separate device. The addition of this requirement would enhance the regulation's clarity. **7b**. Section 1693(b)(2)(C) proposes a default operating schedule requirement for pool controls. This schedule may reduce GHG emissions by promoting load shifting to the late morning and early afternoon when GHG emissions from electricity production are lower. However, shifting operation to a fixed period is not flexible enough to accommodate future changes in electricity use patterns, GHG emissions, electricity rates, and grid needs. In addition to the default scheduling requirement, we recommend the FDAS regulation require pool controls to use open and secure communication protocols that enable the device to respond to signals and modify operations in response to changing conditions, event signals, and price signals. If the CEC maintains the proposed regulation, we suggest clarifying the language.	**7a.** Comment acknowledged and accepted. Staff agrees with this comment for the reasons specified in the comment and made the suggested changes in the first 15-day notice. Section 1693(b)(2)(B) now provides that "pool controls shall have the ability to automatically and continuously synchronize their system clock to the local time." Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language. **7b.** Comment acknowledged and no change made. Staff agree that a fixed period for shifting operation may not be enough to accommodate future changes in electricity use patterns. That is why staff have included an open and secure communication requirement that will enable devices to respond to changing conditions, event signals, price signals and GHG signals.

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249584	**California Investor Owned Utilities** 4/10/2023 **45-Day Comment Written** 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	**7c.** The June 2022 CEC Draft Staff Report Analysis of Flexible Demand Standards for Pool Controls included an adjustment to the default schedule requirement to account for daylight savings time. This adjustment no longer appears in the current regulation. We recommend the CEC include a time adjustment to the default schedule to account for daylight savings time, reverting to the proposed regulatory language published in June 2022. **7d.** We recommend removing the requirement in section 1693(b)(2)(C)1.c. stating the pool control default operating schedule shall "automatically operate the pool filter pump at 50 percent of the maximum operating speed of the pool filter pump or less during all remaining hours and may perform pump priming at any time." Prior requirements in this section state that high-demand activities must occur between 9 a.m. and 3 p.m. and that no automatic operation should occur between 4 p.m. and 9 p.m. Given the availability of efficient variable-speed pool pumps, this additional requirement is not necessary to support the intent of the regulation. **7e.** As noted above, the CEC could consider a waiver process to waive the default schedule requirements for connected pool controls that can by default schedule operations by retrieving signals and rate information from MIDAS.	**7c.** Comment acknowledged and accepted. Staff appreciates the comments and incorporated the suggested edits regarding a time adjustment to account for daylight savings time into an update of the proposed regulatory language. When the pool controls "automatically and continuously synchronize their system clock to the local time" (section 1693(b)(2)(B)(1)(b) this will account for changes from daylight savings times to standard time and back. **7d.** Comment acknowledged and accepted. Staff agrees with this comment for the reasons stated. The suggested revisions to section 1693(b)(2)(C)(1)(c) were made via the first 15-day notice. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language. **7e.** Comment acknowledged. Staff disagrees with this comment. Staff determined that an optional pathway via a waiver process would add unnecessary complexity, is not a simple approach and, considering the burdens of administering it, would not sufficiently advance the goals of the program.

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249584	**California Investor Owned Utilities** 4/10/2023 **45-Day Comment Written** 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	**8**. The CA IOUs recommend additional changes to the proposed regulatory language to increase clarity and support regulation enforceability. We recommend changes to the proposed regulatory language to remove typos, repeated language, and incorrect references, and to ensure internal consistency between sections, e.g., Table A-2 uses different wording than the appliance requirements regulatory language. For Table A-2, we also suggest requiring manufacturers to list the open standards FDAS devices can use for communication. As noted above, the appendix contains a table of recommended changes to the proposed regulatory language. **9.** The CA IOUs recommend the CEC provide additional information regarding price assumptions used for pool controls. We also suggest the CEC consider sensitivity cases for compliant product lifetimes. In the Final Staff Report Analysis of Flexible Demand Standards for Pool Controls, CEC staff used $70 (in 2022 dollars) for the incremental cost of the connectivity and scheduling features to make a product compliant with the regulation. As noted in Table 7-2, the analysis assumes an identical incremental cost for all four proposals: Staff Proposal, Alternative 1 (Load Shifting Based on TOU Rate), Alternative 2 (Load Shifting Based on GHG Rate), and Alternative 3 (Load Shifting Based on Combined TOU and GHG Rate). We ask the CEC to elaborate on why the incremental cost is assumed to be the same across these alternatives. Although the staff proposal is highly cost-effective, the others offer similar consumer benefits at a similar incremental cost. These proposals address some of the concerns noted in this letter regarding the inflexibility of the proposed regulation and the need for appliances to have stronger communication capabilities. The analysis assumes the estimated design lifetime of pool controls is ten years. We encourage the CEC to consider a sensitivity analysis of this factor to capture potential consumer costs if pool controls fail or need repair before the expected parameters or if they exceed this product lifetime. We recommend computing costs and benefits for different life expectancies outside the ten-year design lifetime.	**8.** Comment acknowledged and accepted. Staff agrees with this comment and made the necessary changes via the first 15-day notice. Staff appreciates the comments and the commenters' attention to detail, and incorporated the suggested edits into an update of the proposed regulatory language. **9.** Comment acknowledged and partially accepted. Staff appreciates the comment and the commenters' attention to details. Staff assumed the incremental cost of the connectivity and scheduling features to make a product compliant with the regulation would be $70 in 2022 dollars. The physical components to build a product that complies with the proposed regulations and the alternates are estimated to be much less than $70. The software control algorithms used to control the proposal and Alternate 1 or Alternate 2 or Alternate 3 would all cost a few dollars when spread over a large production run. Staff approximately tripled the estimated incremental costs and rounded to ensure the very first flexible demand appliance standard was still cost effective in a worst-case economic scenario for pool control manufacturers. Regarding computing cost and benefits for different life expectancies outside the ten-year design lifetime, the staff report Appendix provides more than enough data for a stakeholder to extrapolate the benefits related to the costs for any year. The staff report focuses on a basic set of data and the analysis for the first year and the full stock turnover of the device.

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249605	**Fluidra** 4/10/2023 **45-Day Comment Written** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**1.** Fluidra proposes the following revision to the scope and definitions of the regulation to clarify the intent of what is in scope and out of scope, as well as to close any loopholes that may put manufacturers at a competitive disadvantage. “Pool control” and “pool controls” mean any component or group of components, including software, that: For integral dedicated purpose pool pump controls, has the capability to independently schedule the operation and/or control the time of day start and stop times of a pool filter pumps and other pool equipment, and uses single-phase AC power as input power.; or For other than integral dedicated purpose pool pump controls, has the capability to schedule the operation and/or control the start or stop times of a pool filter pump, and uses single-phase AC power as input power; or Includes, but not limited to, the following equipment - “pool timer”, “pool pump switch”, “heater switch”, “direct load control switch” (see definitions). “Pool control” and “pool controls” exclude controls marketed exclusively for uses as a control for pool filter pumps with a rated hydraulic horsepower (hhp) greater than 2.5 hhp.	**1.** Comment acknowledged and accepted with modifications. Staff agrees with these comments for the reasons stated in them and amended the language in section 1691(b) in response during the 15-day notice process. Staff added definitions for “integral”, “pool timer”, “pool pump switch”, “heater switch”, and “direct load control switch”. During a later revision stakeholder feedback was incorporated into the final definitions. Changes to the regulatory definitions, with those additional changes, are reflected in the final adopted regulatory text.

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249605	**Fluidra** 4/10/2023 **45-Day Comment Written** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**2.** We recommend adding the following critical definitions: “Integral dedicated purpose pool pump control” and “integral dedicated purpose pool pump controls” means a pool pump control provided as an integral part of a dedicated purpose pool pump or a replacement dedicated purpose pool pump motor, provided with a user interface or a user interface that is sold separately, that controls the pool pump motor. An integral dedicated purpose pool pump control that is capable of being removed from a dedicated purpose pool pump or a replacement dedicated purpose pool pump motor for remote mounting is considered to be an integral dedicated purpose pool pump control. "Pool timer" means a clock operated device that has the capability and used to start or stop the operation of a pool filter pump or electric pool heater, and uses single- phase AC power as input power. "Pool pump switch" means a clock operated switch device that has the capability and used to start or stop the operation of a pool filter pump, and uses single-phase AC power as input power. "Heater switch" means a clock operated switch device that has the capability and used to start or stop the operation of an electric pool heater, and uses single-phase AC power as input power. "Direct load control switches" means a clock operated switch device that has the capability and used to start or stop the operation of a pool filter pump and/or electric pool heater, and uses single-phase AC power as input power. "Control other pool equipment" means to provide independently programmable or preprogrammed time of day start and stop times of pool equipment other than the pool filter pump.	**2**. Comment acknowledged and accepted. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language. Staff incorporates its response to Fluidra comment 1 by reference here.

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249605	**Fluidra** 4/10/2023 **45-Day Comment Written** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**3.** Fluidra agrees with the CEC's intended In-Scope and Out-of-Scope devices as described in the 23-FDAS-01 "Final Staff Report for Pool Controls", summarized in Table 5-1 of that report (illustrated below). We feel that the proposed revisions, clarifications, and additional definitions more clearly define the Pool Control devices that CEC intends to be in scope of this regulation. For example, the original CEC proposed wording of the definition of "Pool controls" may have exempted "Pool timers" and "Pool Pump and Heater Switch" devices that can be used to only control the pool-filter pump, but are intended to be in scope of the regulation according to the CEC Final Staff Report. We agree these products should be in the scope of this regulation. **4.** Integral pool pump controls may include safety electrical interlocks that are integral onboard relays which allow power to be supplied to a device ONLY when the filtration pump is running and providing water flow. This is critical for equipment that may pose a safety hazard and/or damage to the equipment if operated without water flow – such as Chlorinators, Chemical Feeding Equipment, Pressure Cleaner Booster Pumps, and Heaters. These integral safety electrical interlocks only allow power to be supplied to the auxiliary device(s) when the filtration pump is operating at a specific speed or flow, and do not independently control the operation, output and/or scheduling of the auxiliary equipment, and should not be considered in-scope pool controls.	**3.** Comment acknowledged and accepted. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language. Staff incorporates its response to Fluidra's comment 1, above, by reference here. **4.** Comment acknowledged and accepted. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language. Staff incorporates its response to Fluidra's comment 1, above, by reference here.

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249605	**Fluidra** 4/10/2023 **45-Day Comment Written [underline as presented in comment]** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**5.** The proposed effective date of 12 months after rule publication is extremely aggressive and does not allow pool control manufacturer's the adequate time to comply. Although modern pool controls are generally connectable products, significant time and resources are needed to update - Product firmware, Software, IOT infrastructure, Product testing and debugging - - to be in line with the proposed FDAS requirements. Unlike the telecommunications industry which may have next 5 generations of connected technology in development, the pool industry adopts but is not the driver of new IoT system development. In order to ensure a product function properly, reliably, and safely when it launches into the market, responsible manufacturers must apply rigorous design verification testing, certification, quality control, manufacturer set-up, marketing/education, and launch. Spread across the various system platforms which a manufacturer may offer, the required time and resources grows exponentially. A 12-month enforcement date may create a gap in the availability of pool controls to the California consumer while pool control manufacturers try to catch up to the regulation. Fluidra can submit specific product development resources and timelines under confidentiality to the CEC for additional reference. Based on historical enforcement dates for new Federal Department of Energy (DOE) efficiency regulation which is typically ranges between 3 to 5 years, we feel a minimum 3 to 5 years is not unreasonable to allow the manufacturers the adequate time to develop pool controls that will be safe and reliable for the consumer, helping to ensure the sustainability of this program for the future. **6.** Alternatively, CEC may want to consider a phased-in approach to this FDAS roll out. In early stages of this FDAS rule making, CEC had proposed simply a default schedule and a requirement that products be connectable. Our understanding from CEC presentations is that these simple updates got California most of the way there with regards to energy demand shift and GHG emissions reductions. These small changes can be achieved relatively quickly by manufacturers of modern pool controls.	**5.** Comment acknowledged and partially accepted. Staff appreciates the comments and considered the request for additional time. Staff agrees with this comment in part and modified the "effective date" provision of section 1693(b)(1) to require that pool controls manufactured after September 29, 2025, meet the standard, for the reasons stated in the comment. This will give manufacturers almost two years after the CEC adopted the regulations to comply, which staff has determined is a reasonable compromise that balances the interests served by the regulation with the reasons advanced by the commenter. **6.** Comment acknowledged, considered, and ultimately rejected. Staff appreciates the comments and incorporated the suggested edits for a phased in approach into an update of the proposed regulatory language. However subsequent stakeholder comments requesting clarifying effective dates resulted in the removal of a phased in approach due to the unnecessary complexity that it added to the regulatory language. Staff incorporates its response to Fluidra comment 5 by reference here.

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249605	**Fluidra** 4/10/2023 **45-Day Comment Written** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**7.** We would recommend making any required scheduling to be “selectable” and not the default. Or simply requiring the product instructions to include the recommended California Energy Commission scheduling requirements. Future updates to this rule can then focus on Flex Demand communication and connectivity to MIDAS, etc. See illustrative slides below from previous CEC presentations with regards to the effects of default scheduling to grid demand and GHG emissions.	**7.** Comment acknowledged and partially accepted. Staff appreciates the comments and made edits to the “Default Operating Schedule” text during an update of the proposed regulatory language. Staff directs the commenter to the proposed regulatory language that states “pool controls shall be preprogrammed with a preconfigured or default operating schedule”. This language allows flexibility for the manufacturer to design a product which the consumer can start with the default schedule or configure an alternate personalized schedule.

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249605	**Fluidra** 4/10/2023 **45-Day Comment Written** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**8.** Fluidra agrees to keep the connectivity options open to the manufacturer and utility aggregators. We strongly recommend cloud to cloud (API) communication to connected equipment. Each manufacturer of connected products already has some sort of API infrastructure in place which would make this the easiest and fastest transition for the industry. Fluidra connected products can already receive commands from our cloud-based API systems. External hardware devices such as CTA-2045 are not necessary and should not be made mandatory. Can be one of the options that a manufacturer may choose for connectivity, not a mandatory requirement. **9.** Additionally, we suggest the following update to clarify that local set up includes the use of a smart device app via WiFi or Bluetooth or other connected means. Not all equipment and devices have user interfaces with full control of the settings, and require the user or pool professional to use a smart device app. Section 16933 (b)(2)(B)2. Pool controls shall support both local and remote setup, selection, and update of its operating schedule. Local and remote setup, selection, and update shall be possible through a user interface or a smart device application. **10.** We also suggest the following revision which addresses pool controls that are marketed to the pool professional and require full programming by the installation company. CEC may consider instead requiring the desired default schedule to part of the product literature. Section 16933 (b)(2)(C) 1. Default Operating Schedule. If pool control(s) are provided with factory default schedules, they shall be preprogrammed with a preconfigured or default operation schedule that shall: …	**8.** Comment acknowledged and no changes made. Staff appreciates the comments and did not include CTA-2045 as a mandatory requirement. No changes to the regulatory language were made in response to this comment. **9.** Comment acknowledged and accepted. Staff appreciates the comments and incorporated the suggested clarifying edits that allow the use of a smart device or other connected means into the proposed regulatory language. **10.** Comment acknowledged and no change made. Staff appreciates the comments; however, staff did not require the default schedule to be part of the product literature because staff is continuing to develop an optimal approach for product literature requirements. Staff encourage manufacturers to include information about the default schedule and the benefits of using the flexible demand product features. No changes to the regulatory language were made in response to this comment.

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249605	**Fluidra** 4/10/2023 **45-Day Comment Written [strikeout as presented in comment]** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**11.** In general, we agree with the need to provide a level of cybersecurity protection to connected products. However, we feel the requirements set forth by this ruling are too prescriptive and should only indicate that a manufacturer have a policy for cybersecurity, data protection, and software update requirements that meet any Federal, State and/or Local codes. This can be left up to the individual manufacturer's connected products policies and user agreements. For example, below are two suggested edits to the cybersecurity section: (4) Passwords. The connected device shall contain a security feature that requires a user to generate a new means of authentication. ~~before access is granted to the device for the first time, and shall support the use of passwords meeting the NERC password strength requirements listed below: (A) Each password shall be a minimum of six characters. (B) Each password shall consist of a combination of alpha, numeric, and special characters.~~ (5) Software Update. The manufacturer shall have an update policy that shall include ~~informs the consumer how the manufacturer will support software updates and informs the consumer that~~ the device ~~is~~ being capable of updates ~~being updated~~ whenever new vulnerabilities are discovered. (A) ~~On initial connection to the internet, the connected device shall attempt to receive update notice from the manufacturer's update service and attempt to download, verify, and apply any available patches.~~ (this is not always the best thing to do, should not require automatic download at startup). ~~(B) The manufacturer shall provide an estimated security expiration date or end of life policy that informs the consumer when the manufacturer will be discontinuing the connected ready device support.~~	**11.** Comment acknowledged and partially accepted. Staff appreciates the comments, agrees with the need to provide a level of cybersecurity, but disagrees that the requirements in the proposed regulatory are too prescriptive. Accordingly, staff incorporated some of the suggested edits into an update of the proposed regulatory language during the 15-day modification process. Staff maintained a specific requirement when plain text passwords are used because these types of passwords are commonplace and when not secure create a device vulnerability. Staff agree that automatically attempting an update during the initial connection to the internet could be problematic for some and updated the requirement to provide the customer or the consumer the ability to check for updates when they are ready to update the device.

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249606	**Hayward Pool Products** 4/10/2023 **45-Day Comment Written** Sam Dose Legislative and Energy Consultant Hayward Industries, Inc. One Hayward Industrial Dr. Clemmons, NC 27012 1-335-712-9900	**1.** Alignment of Staff Report and Draft Regulation: As previously communicated, Hayward supports California and the Commission's efforts to reduce energy demand and lessen greenhouse gas emissions by establishing a statewide flexible demand appliance standard (FDAS) for pool controls. We find your draft regulation to lack clarity and alignment with your published Staff Report and support PHTA recommendations to improve alignment. We support recommended definition modification as well as the additional proposed definitions. Effectivity Date: We are concerned with your proposed effectivity date of 12 months following final approval and publication. Our normal development cycle would be 36-48 months to allow for validation of designs in our labs and in field tests. In addition supply chain constraints continue to increase lead times, especially for electronic components. Some electronic component lead times continue to exceed 12 months, and while we make every effort to mitigate these, it is difficult to guarantee that we would be successful for every required purchased part. We support PHTA's request for an effectivity date 36 months following adoption. **2.** Priming Time: We appreciate the CEC efforts to allow off-cycle time to facilitate pump priming by proposing a 15-minute allowance. While most pumps in the market today will be able to meet this requirement, we know that actual priming is as much a function of pool construction as pump performance. One critical factor is the height difference between the pool water level and the location of the pump. We support PHTA's recommendation for a 30-minute priming time allowance. **3.** Conclusion: The suggested PHTA modifications to the proposed regulatory language are opportunities for further improvement that we urge the Commission consider. These recommended changes will ultimately provide clarity that is needed in terms of what is and is not in scope; eliminate requirements that will stifle innovation; and provide adequate time for manufacturers to develop and validate products prior to introduction in the market.	**1.** Comment acknowledged and related changes made. Staff incorporates its responses to the Pool and Hot Tub Association's comments by reference here. Staff appreciates the comments and considered the request for additional time. The final effective date will give manufacturers almost two years after the CEC adopted the regulations to comply, which staff has determined is a reasonable compromise that balances the interests served by the regulation with the reasons advanced by the commenter. **2.** Comment acknowledged and no change necessary. Staff appreciates the comments and incorporated the suggested edits via the 15-day modification process in a way that a specific time allowance for pump priming is no longer needed. **3.** Comment acknowledged. Staff incorporates its responses to the Pool and Hot Tub Association's comments by reference here. Staff appreciates the comments and incorporated many of the suggested edits into an update of the proposed regulatory language via the 15-day modification process.

TN#	Author	Comment	Response
250692	**Pool & Hot Tub Alliance** 4/11/2023 **45-Day Public Hearing Comment Oral** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance	**1.** Thank you Commissioner and staff. I just wanted us to make a brief comment. Jennifer Hatfield. I represent the pool in Hot Tub Alliance in our member support California and the commission's efforts to reduce energy demand and lessen the greenhouse gas emissions by establishing these statewide flexible demand appliance standards for pool controls. We have suggested some modifications to the proposed regulatory language. Those were submitted yesterday. And I'll just note we think these are opportunities to further improve the language you have that you reviewed today. And we just urge you to commission the commission to consider them. We think they're ultimately going to provide clarity that is needed in terms of what is and isn't in scope. Eliminate requirements that it will stifle innovation and provide adequate time for manufacturers to develop the products. So with that, I just want to thank you so much for all your hard work on this. We look forward to continuing to hopefully provide helpful comments to the commission. And thanks.	**1.** Comment acknowledged. General comment of support and notification of written comment submitted under TN 249582.

TN#	Author	Comment	Response
250692	**Power Networks LLC.** 4/11/2023 **45-Day Public Hearing Comment Oral** Dr. Bob Cruichshank	**1.** Hello. Thank you very much for pulling this together. And for the prior document which we provided comments on, I was curious if the slides have already been distributed. I joined a few minutes late and I put that in the chat. And then my question is, did you say that a device has to have two way IP connectivity to be considered connected? … That's great. I think that was in the spirit of several comments that were provided on the written version a few months ago. Thank you for the clarification.	**1.** Comment acknowledged. The initial proposed regulatory language did not require two-way communication, and originally indicated that just receiving a data packet would be acceptable. Staff revised the proposed regulatory language to require two-way communication based upon similar received comments, consistent with this comment.

TN#	Author	Comment	Response
250692	**Fluidra** 4/11/2023 **45-Day Public Hearing Comment Oral** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**1.** Hello and thanks for the opportunity here. Just want to say we have submitted written comments along with PHTA, which we fully support their comments as well. We agree with the approach, so of the pool automation system or pool controls being what we want to target and not just a pool pump controller. This assures the appropriate operation of all pool equipment and the safety of the pool. I would just encourage the CEC as they read through our comments if they want to reach out directly to manufacturers to get clarity on exactly what the comment means. If there's any questions, concerns, please reach out to us or happy to answer those questions to make sure it's understood. And ultimately, we want to help provide a rule that's meaningful and enforceable**.** Thank you.	**1**. Comment acknowledged. General comment of support and notification of written comment submitted under TN 249605.

TN#	Author	Comment	Response
249610	**SkyCentrics** 4/11/2023 **45-Day Comment Written** Tristan de Frondeville Founder & CEO, SkyCentrics Berkeley, CA	**1.** SkyCentrics would like to thank Fluidra for making specific comments on connectivity. In particular, they say: "Fluidra agrees to keep the connectivity options open to the manufacturer and utility aggregators. We strongly recommend cloud to cloud (API) communication to connected equipment. Each manufacturer of connected products already has some sort of API infrastructure in place which would make this the easiest and fastest transition for the industry. Fluidra connected products can already receive commands from our cloud- based API systems. External hardware devices such as CTA-2045 are not necessary and should not be made mandatory. Can be one of the options that a manufacturer may choose for connectivity, not a mandatory requirement." SkyCentrics would like to point out to the commission that no manufacturer has ever provided a CTA-2045 EcoPort as a standard issue on their product without a mandate. Manufacturers are quite happy to provide API access to their products because then (a) they don't have to make changes to their hardware, which they generally like to avoid doing and (b) it means that at scale, they have monopolized the access to their devices, without any competition being possible. It means that there is no other way to provide price and carbon signals to the devices. The competition and the utilities also have no guaranteed access to an alternative communication path then that chosen by the OEM. In most cases that will be Wi-Fi. Utilities have a lot of issues with customers keeping their devices on Wi-Fi when they change their password and they incur operations costs to put them back on. They would like alternative choices when possible, which a hardware CTA-2045 EcoPort guarantees. Historically, utilities have had trouble with this model because they have to negotiate contracts with every manufacturer. They are also susceptible to manufacturers randomly end-of-lifing access to their API. Some utilities have told us that they prefer to have one CTA-2045 module maker to work with, then to have to negotiate contracts with every OEM and then integrate with every different API, and to date, there has never been an API standard for utility signals.	**1.** Comment acknowledged. No changes to the regulatory language were made in response to this comment. Staff disagrees with this comment for the reasons advanced in PHTA's May 9, 2023, comment below. Staff incorporates its responses to this commenter's first comments on the 45-day notice here.

TN#	Author	Comment	Response
250072	**Pool & Hot Tub Alliance** 5/9/2023 **45-Day Comment Written** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**1.** Connectivity. PHTA strongly supports and encourages the CEC to keep connectivity means in this rulemaking flexible to provide manufacturers options on how compliance can occur and allow for future innovation. It has been suggested that the rule should require a CTA-2045 communication port; however, specific to pool controls, this is problematic. Unlike a water heater, pool equipment is installed outdoors, and we are not aware of any weatherproof CTA-2045 port on the market. Mandating any specific type of connectivity means will limit future technology. However, an external hardware device such as a CTA-2045 port can be an option that a manufacturer may choose. This would allow future considerations and research to determine, for example, if a weatherproof CTA-2045 port can be developed. If the CEC were to require only a CTA-2045 port, the length of time required for the research and product development would drastically increase the amount of time needed before manufacturers could possibly attempt to comply. Whereas manufacturers of connected products on the market today already have some sort of API infrastructure in place, which will make the transition less time consuming (although as our previous comments stated, additional time from what is currently proposed is needed to comply with the current proposed requirements).	**1.** Comment acknowledged and no changes made. Staff agrees with this comment. No changes to the regulatory language were made in response to this comment because it does not seek any – the regulatory language proposed by staff has not mandated any specific type of connectivity, which aligns with this comment.

TN#	Author	Comment	Response
250967	**Inex Recreation Corp.** 7/7/2023 **First 15-Day Comment Written** Mathew Whalen 4001 Via Oro Ave P.O. Box 1440 Long Beach, CA 90801-1440 (310) 549-5400	**1.** Pool filter pumps supplied with storable pools currently comply with the DOE regulations and include a timing system that automatically starts and stops the pump after a user defined run time. These timing systems are self-contained and are not WiFi, Bluetooth, or radio connected devices. We would like to offer the following comments on the revised proposed rule. “Pool Control” and “Integral” Definitions. The 15-day proposed language for what constitutes a pool control is not only a significant departure from what was previously published, but also contrary to the table in the February 23, 2023, staff report and previous conversations the pool industry has had with staff. The primary concern is regarding controls that may be integral to a pool pump appearing to now fall under the scope of this rulemaking. Based on previous rulemaking documents, we understood integral controls to be out of scope and we are not aware of any pool industry comments to the CEC implying this should be changed. Further, the current proposed definition lacks clarity, which will cause interpretation issues for those required to comply with this rulemaking. As drafted it could be interpreted to impact many products that we do not believe was the CEC’s intent, such as capturing small storable pool sand and cartridge filters that have a basic built-in digital timer that turns the pump on every 24 hours and turns it off after the preset run time. This significant change will add additional costs to the products that previously did not fall under the definition of “pool control”. The amount of time required to design, pilot, certify (the addition of a Wi-Fi module will require FCC certification and privacy related controls), and tool for manufacturing the new module will take at least 36 months. **2.** We believe September 2024 is not enough time for us to be prepared considering this significant change in scope of what falls under a “pool control.” The lack of clarity within the definition will only further increase the time needed to comply, as manufacturers obtain product specific clarity from the CEC on what will have to comply before proceeding with new product designs.	**1.** Comment acknowledged and partially accepted. Staff agrees with these comments related to definitions and incorporated Pool and Hot Tub Associations edits that clarify scope into an update of the proposed regulatory language via the 15-day modification process. As described in the staff report, staff determined creating an exception for a storable pool pump controller would be a lost opportunity for consumers when it comes to managing their electricity bills and avoiding GHG emissions therefore the comment to create an exclusion was not accepted. **2.** Comment acknowledged and partially accepted. Staff appreciates the comments and agrees in part and modified the “effective date” provision of section 1693(b)(1) to require that pool controls manufactured after September 29, 2025, meet the standard, for the reasons stated in the comment. This will give manufacturers almost two years after the CEC adopted the regulations to comply, which staff has determined is a reasonable compromise that balances the interests served by the regulation with the reasons advanced by the commenter.

TN#	Author	Comment	Response
250967	**Inex Recreation Corp.** 7/7/2023 **First 15-Day Comment Written** Mathew Whalen 4001 Via Oro Ave P.O. Box 1440 Long Beach, CA 90801-1440 (310) 549-5400	**3.** In addition, the Pool & Hot Tub Alliance (PHTA) previously provided a definition for an "integral dedicated purpose pool pump control", but the new definition being proposed for "integral" does not connect to the rulemaking, as the term is not used within the revised proposed language. Based on all the above, we strongly urge the CEC to revert to the original intent of what is covered under a pool control and consider the definition suggestions PHTA previously provided in their April 10, 2023, comments, as follows: Replace the current proposed definition of "pool control" with the following language: "Pool control" means any component or group of components, including software, that: For integral dedicated purpose pool pump controls, has the capability to independently schedule the operation and/or control the start or stop times of a pool filter pump and other pool equipment, and uses single-phase AC power as input power; For other than integral dedicated purpose pool pump controls, has the capability to independently schedule the operation and/or control the start or stop times of a pool filter pump, and uses single-phase AC power as input power; or Includes, but is not limited to, a pool timer, pool pump switch, heater switch, or direct load control switch. **4.** Replace the definition of "integral" with the following definition: "Integral dedicated purpose pool pump control" means a pool pump control provided as an integral part of a dedicated purpose pool pump control supplied as an integral part of a dedicated purpose pool pump or a replacement dedicated purpose pool pump motor that controls the pool pump motor. A user interface or a user interface that is sold separately, that controls the pool pump motor; or an integral dedicated purpose pool pump control that is capable of being removed from a dedicated purpose pool pump or a replacement dedicated purpose pool pump motor for remote mounting; is an integral dedicated purpose pool pump control. **5.** Intex also suggests the CEC include a definition of "independently schedule" to clarify that only connected pool controls are within the scope of the rule: "Independently Schedule" means the capability to communicate via a data connection to an external device or devices, for purposes of reading, adjusting, or interrupting the operation of the controlled device.	**3.** Comment acknowledged and partially accepted. Staff appreciates the comments and incorporated the intent of the suggested edits into an update of the proposed regulatory language. Staff did modify language to align more with the original intent of what is covered under a pool control as suggested; however, staff did not use the exact language as proposed by the commenter. Staff incorporates its response to the Inex Recreation Corp. comment 1 above, here. **4.** Comment acknowledged and partially accepted because staff did not replace the definition of integral; however, staff did modify the proposed regulatory language to address the commenter concern with the definition using an alternate approach. Staff appreciates the comments and incorporated the suggested edits removing the need to have a definition for the word "integral" into an update of the proposed regulatory language. Staff incorporates its response to the Inex Recreation Corp. comment 1 above, here. **5.** Comment acknowledged and partially accepted because a definition of "independently schedule" was not added. Instead staff determined that removing the word "independently" in the description of pool control would provide the needed clarity without requiring an additional definition. Staff appreciates the comments and incorporated the suggested edits removing the word "independently" from "independently schedule", adding clarity into an update of the proposed regulatory language. Staff incorporates its response to the Inex Recreation Corp. comment 1 above, here.

TN#	Author	Comment	Response
250987	**Pool & Hot Tub Alliance** 7/10/2023 **First 15-Day Comment Written [underline as presented in comment]** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**1.** PHTA suggests the Commission take the entire Energy Star definition of "open standards" and not just part of it, to ensure consistency and prevent confusion. In addition, per the CEC's June 29, 2023, email providing PHTA clarification on what constitutes an open standards communication, we would encourage the same list of examples provided to us be included in the definition itself. This will provide clarity and guidance that can be extremely useful to those required to comply with this rulemaking. Replace the current proposed "open standards" definition with the following language: "Open standards" means a communication with entities outside the CPPS that use, for all communication layers, standards: Included in the Smart Grid Interoperability Panel (SGIP) Catalog of Standards, and/or Included in the National Institute of Standards and Technology (NIST) Smart Grid Framework Tables 4.1 and 4.2, and/or Adopted by the American National Standards Institute (ANSI) or another well- established international standards organization such as the International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), International Telecommunication Union (ITU), Institute of Electrical and Electronics Engineers (IEEE), or Internet Engineering Task Force (IETF). Examples would include, but not be limited to, Wi-Fi, Zigbee, and Bluetooth. In addition, if the following links can be provided within the rulemaking or within any forthcoming guidance, this could also be helpful, as they are the same links Energy Star provides for Items 2 and 3 above, respectfully: https://www.nist.gov/programs-projects/smart-grid-national-coordination/catalog-standards, http://www.nist.gov/smartgrid/upload/NIST_Framework_Release_2-0_corr.pdf	**1.** Comment acknowledged and some changes made. Staff appreciates the comments and incorporated the intent of the suggested edits us as much as possible from the ENERGY STAR definition into an update of the proposed regulatory language. Section 1691(a) defines "Open standards" as "standards adopted or published, individually or jointly, by one or more of the following organizations: the National Institute of Standards and Technology (NIST), American National Standards Institute (ANSI), International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), International Telecommunication Union (ITU), Institute of Electrical and Electronics Engineers (IEEE), or Internet Engineering Task Force (IETF)." This better aligns the regulation with the Energy Star Program, to the extent staff has determined necessary. In particular, the regulation names the largest, most established standards setting organizations but declines to include direct references to individual portions of the standards or product names which can change over time.

TN#	Author	Comment	Response
250987	**Pool & Hot Tub Alliance** 7/10/2023 **First 15-Day Comment Written** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**2.** Radio Broadcast Data System Receivers. This is another area of the 15-day proposed language that marks a substantial new requirement that previously did not exist in prior proposed language nor was requested by industry or the California Investor-Owned Utilities. Simply put, this came as a surprise to industry considering the February 23, 2023, staff report determined not to include FM connectivity. The change appears based on one stakeholder comment, without inquiring from industry if this was something currently done or could be achieved. A January 1, 2027, compliance requirement is not adequate time, first and foremost due to the fact no industry manufacturer currently produces products with a radio broadcast data system receiver. Considering the industry has not even attempted such a design, there may be many technical pitfalls and difficulties that would have to be overcome or that may simply not work with current products. Initial assessments have concluded that there are possible security concerns with such a requirement, for instance. Further there are a lot of unknowns regarding reliability and good communication when using a radio broadcast data system receiver. Our preliminary evaluation is FM is not a practical application for pool control products, but even if it is found to be technically feasible, the time and costs to redesign all current products are underestimated. What is cited as the cost to do so is a small portion of what the total cost will be to a manufacturer. In the end, 15 days is simply not enough time for industry to do the due diligence to know all the issues that may exist and what that may mean in terms of cost and time to comply. PHTA suggests the CEC remove this requirement in the final regulation. If it is something the Commission wants to consider in the future, we would request time for a thorough discussion with industry prior to making it a future requirement. Considering additional products will be added to the flexible demand program, an FM receiver could be added at a later date, if found to be a practical application for pool controls.	**2.** Comment acknowledged and accepted. Staff appreciates the comments, agrees with them for the reasons stated in the comment and incorporated the suggested edits into an update of the proposed regulatory language that eliminated the option for using radio broadcast data system receivers in the second 15-day modification process. In that process, the definition of “Radio broadcast data system receiver” or “radio data system receiver” was deleted from section 1691(a) and the option to use them as communication devices was deleted from section 1693(b)(6). References to “Radio broadcast data system receiver” or “radio data system receiver” were also deleted from the consent provisions of section 1694(e).

TN#	Author	Comment	Response
250987	**Pool & Hot Tub Alliance** 7/10/2023 **First 15-Day Comment Written** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**3.** Compliance Date. PHTA supports the addition of the connected ready option for devices manufactured on or after September 13, 2024. Industry concern with the January 1, 2027, compliance date is that by removing the connected ready option consumers who have built their pool pad based on that option and have a centralized control platform will now in effect be penalized or they will simply hesitate to purchase new products. This is because PHTA interprets the January 1, 2027, requirements to mean that even if a consumer already has a connected pool pad, but they want to now replace or upgrade a piece of equipment, they must pay again for something they already have due to the requirement it must be a connected device and not simply connected ready. PHTA suggests the Commission add a provision to allow the sale of "connected ready" pool controls for pool owners that already have the separate components necessary for connectability, as consumers should not pay more for components they already have purchased. Perhaps the Commission can work with the utilities to determine if the consumer is using the flexible demand program with their connected ready device, allowing an exemption from having to purchase this unnecessary device.	**3.** Comment acknowledged and some changes made. Staff proposed inclusion of provisions for "connected ready" pool controls in an early revision of the proposed regulatory language, however received commentary on those provisions led staff to subsequently remove reference to "connected ready" products and instead modify the effective date for requiring connected devices. Staff determined that the widespread availability of modern IoT device technology has decreased costs to connect devices, such that the cost to make a device be connected is a relatively small fraction of the overall cost to consumers. Staff appreciates the comments and has added time to the original compliance date via the 15-day modification process, making it now September 2025, which is nearly two years after the Commission adopted the regulation at its. The final effective date plus the rulemaking duration results with almost three years, but significantly longer that the one year that was first proposed. Staff agrees with this comment in part and modified the "effective date" provision of section 1693(b)(1) to require that pool controls manufactured after September 29, 2025, meet the standard, for the reasons stated in the comment. This will give manufacturers almost two years after the CEC adopted the regulations to comply, which staff has determined is a reasonable compromise that balances the interests served by the regulation with the reasons advanced by the commenter.

TN#	Author	Comment	Response
250987	**Pool & Hot Tub Alliance** 7/10/2023 **First 15-Day Comment Written** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**4.** Clock Requirements and Smart Devices. The 15-day language would require both local and remote set up, but most controls come with a simple interface, and it is within the smart device application, the remote set up, that the more comprehensive controls and options exist. An application on a smart device should be an approved user interface and should be considered local set up if it is going through Bluetooth. To not interpret a smart device application as a means for local set up is stifling the way technology is trending and what consumers want to use. Consumers do not want to have to go out to their pool pad to control the various equipment, rather, they want to be able to do so not only from the comfort of their living room, but also from afar. Further, if a smart device application is not considered local set up, manufacturers will have to add these more comprehensive controls to the pump itself, which will have additional costs not accounted for in the staff analysis and in most cases, these added functions will not be utilized. PHTA suggests that a “smart device application” be added to (B)2 to provide the needed clarity. To do otherwise is contrary to where the market is going and only adds cost to the consumer that is not warranted.	**4.** Comment acknowledged and some changes made. Staff appreciates the comments and incorporated the intent of the suggested edits into an update of the proposed regulatory language via the 15-day modification process for the reasons stated in the comment. Section 1691 now provides this definition of “Connected device” means any device that can wirelessly communicate via open standards with entities outside the device by means of integrated or separate communications hardware or software. A device that is able to receive but not send communication is not a connected device. Section 1693(b) requires pool controls to be connected devices. Section 1693(b)(2) was modified via the second 15-day notice and the local setup requirement was eliminated for the reasons specified in the comment.

TN#	Author	Comment	Response
250987	**Pool & Hot Tub Alliance** 7/10/2023 **First 15-Day Comment Written** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**5.** Section 1694. Customer and Consumer Consent. The 15-day language adds new sections (b)-(e) that may not be applicable to pool controls. We understand this section is ultimately for all products that fall under flexible demand standards and is not intended to be specific to pool controls, but as written there are concerns with how pool controls must respond, as follows: Is the intent whether the pool control can start/stop and/or change the schedule of its own operation or is it that the pool control be capable of starting/stopping and/or changing the operation or schedule of the specific equipment? Equipment could be the pool filter pump, pressure cleaner booster pump (PCBP), and/or an electric pool heater, for example. Is the intent whether the pool control can provide the operation status and programmed schedule of the pool control itself or is it that the pool control should be capable of providing the operation status and programmed schedule of the specific equipment (i.e., pool filter pump, PCBP, and/or electric heater)? Is the intent whether the pool control can provide a transmission representing the real-time power draw of the pool control itself or is it that it must be capable of providing the data of the real-time power draw of the specific equipment it is controlling? Is the intent whether the pool control is capable of starting/stopping and/or changing the schedule of its own operation or is it that the pool control can start/stop and/or change the operation or schedule of the specific equipment it is controlling? Using item (d) for a more detailed example of our concerns, we understand this is requiring the real-time power draw to be reported, but the power draw for the actual pool control is minimal. If the intent is to ascertain the power draw of the products the pool control is controlling, how would a pool control know what other equipment is hooked up and running, and how to estimate its consumption and be able to report back? The power draw and other requirements in these new subsections make sense if the appliance is a connected washing machine, for instance, as you are specifically looking for the information from the washing machine. In the case of a pool control, it can be controlling a multitude of equipment and it is not feasible for that to be reported. Therefore, PHTA recommends the Commission consider an exception for pool controls to these specific requirements. Alternatively, we request the Commission clarify how this would work where potentially the pool control is connected to multiple pieces of equipment.	**5.** Comment acknowledged and partially accepted. In response to this comment and for the reasons stated in it, section 1694 was modified in the 15-day modification process. In that process, subsections (c)-(e) were stricken and section 1694(b) was amended to read as follows: “(b) Appliances that are connected devices and are subject to this Article shall be capable of receiving, acting upon, and responding to authorized remote requests via a communication link, that schedule, shift, or curtail appliance operations with customer or consumer consent. At a minimum, the appliance shall be capable of acting upon and responding to authorized signals received via a communication link requesting: (1) the start or stop of operation; and (2) changes to equipment operation or schedule.” Staff appreciates the comments and incorporated the intent of the suggested edits to create flexibility into an update of the proposed regulatory language.

TN#	Author	Comment	Response
250987	**Pool & Hot Tub Alliance** 7/10/2023 **First 15-Day Comment Written** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**6.** Pool controls are the first product to be regulated under the flexible demand standard program and we urge the CEC to not rush a rulemaking that in this latest 15-day language has substantive new requirements and many areas that are unclear and could cause interpretation issues. This in turn will negatively affect the program itself, the consumers and the manufacturers who are trying to comply with an ambiguous rule. The suggested PHTA modifications to the latest proposed regulatory language are opportunities for further improvement that we strongly urge the Commission consider before issuing a final rule.	**6.** Comment acknowledged. The CEC agrees with this comment and worked closely with participants to address issues during the rulemaking process, as shown by the multiple published revisions to the proposed regulatory language and this response to participant comments.

TN#	Author	Comment	Response
250988	**National Electrical Manufacturers Association** 7/10/2023 **First 15-Day Comment Written** Alex Baker Director, Regulatory Affairs	**1.** NEMA and its members who manufacture dedicated purpose pool pump motors (DPPPM) support the California Energy Commission's (CEC) efforts to reduce energy consumption from pool pumps operating at unnecessarily high levels through establishing flexible demand appliance standards (FDAS) for pool controls. Unfortunately, the proposed definition of "pool control" and "pool controls" would unintentionally include DPPPM within scope, thereby requiring motors that were not designed or intended to be used to control the entire pool system to comply with the FDAS for pool controls. As a result, consumers would be forced to purchase an entire pool pump system in situations where a replacement DPPPM would suffice. Since DPPPM are not designed to function as pool controls, by unintentionally including them within the scope of the pool control definition, CEC would inadvertently eliminate DPPPM products from the marketplace. In the letter submitted by the Pool & Hot Tub Alliance (PHTA) on April 10, 2023, PHTA proposed the following modifications to the pool control(s) definition. NEMA supports this proposed language, since it would exclude DPPPM from the scope of the definition. DPPPM should not be included as a pool control that must be a communicating device.	**1.** Comment acknowledged and accepted. Staff agrees with this comment for the reasons stated in it and made modifications in the second 15-modification process in response to it. The first was to define DPPPM in section 1692(b) as follows: "Dedicated-purpose pool pump motor" has the meaning specified in 10 CFR 431 Subpart Z (2021). Staff appreciates the comments and incorporated the suggested edits for pool control scope into an update of the proposed regulatory language. The final version of section 1692(b) also now contains this definition: "Pool control" means equipment with the capability to start, stop, or otherwise control the operation of a pool filter pump and includes, but is not limited to, a pool timer, pool pump switch, heater switch, direct load control switch, or any component or group of components, including software, that has the capability to schedule the operation or control the start or stop times of a pool filter pump. Pool controls may control other pool equipment in addition to a pool filter pump. 1. "Pool control" excludes: (A) controls marketed exclusively for use as a control for pool filter pumps with a rated hydraulic horsepower (hhp) greater than 2.5 hhp; or (B) safety interlock or shutoff controls; or (C) controls integral to a single pool filter pump or pump motor that are capable of controlling only that pump or motor. Staff disagrees with this comment in relation to DPPMs and does not believe the modified regulation would prohibit their use or exclude them from the marketplace.

TN#	Author	Comment	Response
250991	**California Investor Owned Utilities** 7/10/2023 **First 15-Day Comment Written** 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	**1a.** 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. 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. **1b.** 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.	**1a.** Comment acknowledged. Staff appreciates the comments and support for the changes made in response to previous comments. **1b.** Comment acknowledged. Staff appreciates the comments and support for changes made in response to previous comments. **2.** Comment acknowledged and accepted. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language that eliminated the option for using radio broadcast data system receivers in the second 15-day modification process. In that process, the definition of "Radio broadcast data system receiver" or "radio data system receiver" was deleted from section 1691(a) and the option to use them as communication devices was deleted from section 1693(b)(6). References to "Radio broadcast data system receiver" or "radio data system receiver" were also deleted from the consent provisions of section 1694(e). Staff made these changes because it agrees with the reasons advanced in this comment and other similar comments that including radio broadcast data system receivers in the regulation is premature at this point in that staff and stakeholders have not had sufficient time to analyze the technical feasibility and cost effectiveness aspects their use.

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250991	**California Investor Owned Utilities** 7/10/2023 **First 15-Day Comment Written** 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	**3.** Although radio broadcasting is briefly mentioned as a means of connectivity in the Final Staff Report,1 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.2 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.3 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.4 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 without internet or cellular connectivity and should more thoroughly justify the technical feasibility and cost-effectiveness of proposed options in published rulemaking documents.	**3.** Comment acknowledged and accepted. Staff agrees with these comments, and the radio requirements were removed during an update of the proposed regulatory language in the second 15-day modification process. Staff incorporates its response to CA IOU comment 2 above by reference here.

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250991	**California Investor Owned Utilities** 7/10/2023 **First 15-Day Comment Written** 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	**3a.** 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 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. **3b.** 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. **3c.** 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.	**3a.** Comment acknowledged and some changes made. The proposed language would allow, but not require, pool controls to connect to the MIDAS interface; a waiver process would be burdensome and unworkable at this point and not serve the goals of the program. Staff appreciates the comments and incorporated the suggestions regarding secure, bi-directional, reliable and open-standard communication ideas into the proposed regulatory language via the 15-day modification process. **3b.** Comment acknowledged and accepted. Staff agrees with this comment and made the suggested change. **3c.** Comment acknowledged and some changes made. Staff agrees with this comment and has determined that it is more desirable in the regulation to generally define what it is for an FDAS to be connected or connected ready and evaluate this requirement on a case-by-case basis in future FDAS rulemakings as provided in the final proposed regulatory language. Staff appreciates the comments and incorporated some of the suggested edits.

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250991	**California Investor Owned Utilities** 7/10/2023 **First 15-Day Comment Written** 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	**3d.** 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.	**3d.** Comment acknowledged and accepted. Staff agrees with this comment. Section 1693(b)(6) was redrafted and now provides: "(C) Pool controls shall be capable of communicating their current operating status, at a minimum meaning whether the device is operating or not operating the pool filter pump, and their stored schedule. (D) Pool controls that are capable of communicating additional information, including but not limited to real-time power draw, shall do so only to authorized entities and only with customer or consumer consent." Section 1694(b) was redrafted and now provides "Appliances that are connected devices and are subject to this Article shall be capable of receiving, acting upon, and responding to authorized remote requests via a communication link, that schedule, shift, or curtail appliance operations with customer or consumer consent. At a minimum, the appliance shall be capable of acting upon and responding to authorized signals received via a communication link requesting: (1) the start or stop of operation; and (2) changes to equipment operation or schedule." Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language through the 2nd 15-day modification process. These modifications clarify and explain that the features described are features of the pool controls, not of the equipment operated by the pool control such as the pool filter pump.

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250991	**California Investor Owned Utilities** 7/10/2023 **First 15-Day Comment Written** 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	**3e.** 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.	**3e.** Comment acknowledged and accepted. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language. Staff agrees with this comment and modified section 1691(a) to read: "Connected device" means any device that can wirelessly communicate via open standards with entities outside the device by means of integrated or separate communications hardware or software. A device that is able to receive but not send communication is not a connected device." The modified definition of a "Connected device" coupled with appliance specific communication requirements added during the second 15-day modification process, Section 1693(b)(6) clarify the communication of minimal load management capabilities. Staff incorporates its response to Comment 3d by reference here.

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250991	**California Investor Owned Utilities** 7/10/2023 **First 15-Day Comment Written** 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	**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. **4a.** 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.	**4.** Comment acknowledged and no change made. Staff has ensured that stakeholders have been afforded adequate time and information to vet the proposed regulations. This is reflected in the quality of stakeholder comments and the many changes to the proposed regulations that have been made in response to them. Staff has provided sufficient justification for the regulatory text and therefore, staff declines to update the staff report. The scope of the regulation is now realigned to the final staff report. **4a.** Comment acknowledged and no change made. Staff disagrees with this comment and has determined that the proposed regulatory language appropriately and clearly differentiates between requirements that apply to FDAS generally and those that apply to pool controls specifically. Staff has taken this approach to avoid duplicative regulatory language in each particular FDAS because there are definitions, testing, marking and enforcement provisions that appropriately apply to FDAS across the board. Furthermore, diverse stakeholders, including those outside the pool controls market, have been notified and have engaged in the rulemaking process.

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250991	**California Investor Owned Utilities** 7/10/2023 **First 15-Day Comment Written** 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	**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. **5a**. 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. **5b.** 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.	**5.** Comment acknowledged and some changes made. Staff made modifications to the definition of "pool control" addressing multiple comments in the final proposed regulatory language in section 1691(b), including adding language that excluded the equipment requested by this comment. **5a.** Comment acknowledged and no changes made. Staff disagrees with this comment and has determined that there is utility to the customer to be able to manually control the equipment, especially in cases where internet connectivity is unavailable/disrupted. Manual controls are also a method for consumers to control when the device operates and thereby flex their energy use. Absent manual controls, customers who do not own smart devices or have stable access to the internet would not be able to effectively flex their energy use. No changes to the regulatory language were made in response to this comment. **5b.** Comment acknowledged and no changes made. Staff disagrees with this comment and has determined that retaining the use of "customer" and "consumer" adds clarity to the regulation, makes clear that regardless of a person's status as a purchaser/user of an FDAS appliance or customer of a load-serving entity, the ability of both groups to flex their electricity usage is key to FDAS requirements. It also provides clarity in interactions with other laws that may use either or both of these terms. If these definitions need to be modified in future rulemakings, staff will revisit them then. No changes to the regulatory language were made in response to this comment.

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250991	**California Investor Owned Utilities** 7/10/2023 **First 15-Day Comment Written** 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	**5c**. 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. **5d.** 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). **Appendix:** Recommended Editorial Changes to 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.	**5c.** Comment acknowledged and no changes made. In the second 15-day language, staff removed reference to "connected ready" products; therefore, no changes to the regulatory language were made in response to this comment. **5d.** Comment acknowledged and accepted. Staff agrees with this comment and made the necessary changes via the second 15-day notice. Staff appreciates the comments and the commenters' attention to detail, and incorporated the suggested edits into an update of the proposed regulatory language. **Appendix.** Comment acknowledged and accepted. Staff agrees with this comment and made the necessary changes via the second 15-day notice. Staff appreciates the comments and the commenters' attention to detail, and incorporated the suggested edits into an update of the proposed regulatory language.

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251002	**Fluidra** 7/10/2023 **First 15-Day Comment Written [underline as presented in comment]** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**1.** As a member of the Pool & Hot Tub Alliance Fluidra fully supports and endorses the comments jointly submitted by the Pool & Hot Tub Alliance (PHTA). **2.** Fluidra proposes the following revisions to the definitions in order to clarify the intent of what is "in scope" and "out of scope", as well as to close any loopholes that may put manufacturers at a competitive disadvantage. "Pool Control" means equipment with the capability to start, stop, or otherwise control the operation of a pool filter pump and includes, but is not limited to, a pool timer, pool pump switch, heater switch, direct load control switch, or any component or group of components, including software, that: has the capability to independently schedule the operation or control the start or stop times of a pool filter pump. Pool controls may control other pool equipment in addition to a pool filter pump. "Pool control" excludes controls marketed exclusively for use as a control for pool filter pumps with a rated hydraulic horsepower (hhp) greater than 2.5 hhp, and excludes safety interlock or shutoff controls, and excludes integral pool filter pump controls that do not have the capability of independently scheduling the operation or control of other pool equipment in addition to the pool filter pump. **3.** Fluidra also recommends the addition of the following definition: "Integral pool filter pump control" means a pool pump control provided as an integral part of a dedicated purpose pool filter pump or a replacement dedicated purpose pool filter pump motor, provided with a user interface or a user interface that is sold separately, that controls the pool pump motor. An integral dedicated purpose pool pump control that is capable of being removed from a dedicated purpose pool pump or a replacement dedicated purpose pool pump motor for remote mounting is considered to be an integral dedicated purpose pool pump control. **4.** Fluidra agrees that integral pool filter pump controls not capable of controlling other pool equipment should not be included in the scope of FDAS. Including these pool pump controls would be a significant change to the scope of this ruling, and in our opinion, would not be a practical and economically justifiable solution. The industry standard for a connected pool pad is through the use of pool controls, otherwise known as pool automation systems.	**1.** Comment acknowledged and accepted. Staff appreciates the comments. Staff incorporates its responses to PHTA's comments by reference here. **2.** Comment acknowledged and some changes made. Staff made modifications to the definition of "pool control" addressing multiple comments in the final proposed regulatory language in section 1691(b), including adding language that excluded the equipment requested by this comment. **3.** Comment acknowledged and changes made. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language. Now section 1691(b) contains the following language that excludes from the definition of pool controls: "(C) controls integral to a single pool filter pump or pump motor that are capable of controlling only that pump or motor." **4.** Comment acknowledged and change made. Staff appreciates the comments and incorporated the suggested edits into an update of the proposed regulatory language. Now section 1691(b) contains the following language that excludes from the definition of pool controls: "(C) controls integral to a single pool filter pump or pump motor that are capable of controlling only that pump or motor."

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251002	**Fluidra** 7/10/2023 **First 15-Day Comment Written [underline as presented in comment]** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**5.** Pool filter pumps and their integral controls should only be required to be "connected ready devices". It would be wasteful to force a consumer to pay additional costs for connectivity hardware/software when the pool controls on their pool pad are already compliant to the requirements of a "connected device" transceivers unreliable and impractical on a pool pump. One of the primary reasons separate Pool Controls are the widely adopted method for connectivity.	**5.** Comment acknowledged. Staff disagrees with this comment. Staff determined that Pool Controls shall be connected devices. The widespread availability of modern IoT device technology has decreased costs to connect devices where the cost to make a device be connected is a relatively small fraction of the overall cost to consumers. Staff notes that pool pumps or filters sold with pool pads or similar controls are compliant with proposed connectivity requirements, and that replacement dedicated purpose pool pump motors are not subject to the proposed requirements. Because the cost of manufacturing connected devices has declined significantly over time, coupled with the fact that consumers who purchase connected devices will immediately be able to remotely control their energy use, requiring the pool controls to be connected devices better achieves the goals of the regulation than connected-ready devices which require additional steps on the part of the consumer to connect and control them remotely.

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251002	**Fluidra** 7/10/2023 **First 15-Day Comment Written [underline as presented in comment]** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**6.** "Open standards" – We support the addition of all widely adopted and used open standards and application layer, and propose the suggested updates to the open standards definition. "Open standards" means a communication with entities outside the CPPS that use, for all communication layers, standards: Included in Hypertext Transfer Protocol (HTTP), and/or Included in the Smart Grid Interoperability Panel (SGIP) Catalog of Standards, and/or Included in the National Institute of Standards and Technology (NIST) Smart Grid Framework Tables 4.1 and 4.2, and/or Adopted by the American National Standards Institute (ANSI) or another well- established international standards organization such as the International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), International Telecommunication Union (ITU), Institute of Electrical and Electronics Engineers (IEEE), or Internet Engineering Task Force (IETF). Additional examples include, but not be limited to, Wi-Fi, Zigbee, and Bluetooth.	**6.** Comment acknowledged, and no change made. Staff appreciates the comments and incorporated many of the previously suggested edits into an update of the proposed regulatory language. Staff added this definition of open standards to section 1691(a): "Open standards" means standards adopted or published, individually or jointly, by one or more of the following organizations: the National Institute of Standards and Technology (NIST), American National Standards Institute (ANSI), International Organization for Standardization (ISO), International Electrotechnical Commission (IEC), International Telecommunication Union (ITU), Institute of Electrical and Electronics Engineers (IEEE), or Internet Engineering Task Force (IETF)." (The Internet Engineering Task Force is the organization that adopts/publishes HTTP standards.) Staff found that reference to the SGIP Catalog of Standards would be redundant with direct reference to the entities that adopt the standards published in the catalog, and could potentially cause confusion. Staff also found that selecting some adopted standards to use as examples and not selecting others could be misleading and cause confusion regarding which standards are and are not "open standards".

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251002	**Fluidra** 7/10/2023 **First 15-Day Comment Written [underline as presented in comment]** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**7.** FM radio receivers have never been used for communication of pool products, as far as we know, and the practicality and reliability of this technology for use on pool controls is unknown. Furthermore, we are unaware of any widespread adoption by utilities for this method of communication for Appliance Flexible Demand. Being a brand-new technology to our industry, manufactures will need to consider all aspects of safety, reliability, cybersecurity, IoT infrastructure, coding, FCC emissions, etc. for these FM receivers. There would be several expected and unexpected challenges to make this technology work, and with a compliance date of 3 years, this is a significant addition to the development manufacturers will need for compliance to this FDAS Rule Making. Fluidra recommends removing this requirement to this round of rulemaking for Pool Controls. If in the future this type of technology is widely adopted as a practical, reliable, and sole source of communication for utilities and the associated flexible demand appliances, CEC can revisit this requirement with further input and discussion from industry, utilities, and all relevant stakeholders. At this time the addition of this requirement would be premature.	**7.** Comment acknowledged and accepted. Staff appreciates the comments, agrees with them for the reasons stated in the comment and the radio requirements were removed during an update of the proposed regulatory language during the 15-day modification process.

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251002	**Fluidra** 7/10/2023 **First 15-Day Comment Written [underline as presented in comment]** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**8.** As previously stated, we disagree with the additional requirement of a radio broadcast data system receiver. Additionally, pool owners should still be able to purchase "connected ready devices" for their existing pool pad after 2027. For example, if a pool owner already owns connected pool controls that are compliant to the 2027 CEC "connected device" requirements, then they may not need to spend the money to repurchase compatible connectivity hardware for their upgrades. The nature of pool controls in our industry is to have these systems be modular, compatible, and upgradeable. Often a pool owner will upgrade their pool controls and pool equipment to the latest generation of controls which still supports their existing connected pool pad system. They should be able to do this without wasting money on connectivity hardware which they may already have that is already CEC compliant. The hardware for connectivity in pool controls is typically a modular system/component which manufacturers make compatible across their line of equipment. It is imperative that these continue to be allowed to be sold separately, with the requirement that pool controls are a "connected ready device". Fluidra suggests the following revision to this clause. Pool controls manufactured on or after January 1, 2027, shall be connected devices, or connected ready devices compatible with separable hardware and/or software that meet the requirements of a connected device. **9.** The use of portable smart device, such as a smart phone, tablet, or laptop for BOTH local and remote setup is extremely common in modern pool equipment controls. The onboard appliance user interface may be a simple on/off control, and the user must connect via Bluetooth for example to schedule, program, and use the complete features of a connected pool control. This is commonplace in our industry, and the use of a smart device should be allowed for both local and remote setup and scheduling of a device. Not recognizing the use of a smart device as an acceptable and practical means of local setup would be a step backwards. Suggest the following update to item 2. (a) Pool controls shall support both local and remote setup, selection, and update of its operating schedule via a user interface. Local and remote setup, selection, and update shall be possible through a user interface. The user interface for local setup shall be integrated into or supplied with the control, or via a smart device such as smartphone, tablet, or laptop for installation at the same location or premises as the control.	**8.** Comment acknowledged and partially accepted. Radio broadcast data system receiver requirements were removed following public comment. Staff incorporates its response to Fluidra comment 7 above, by reference here. Staff determined following review of received public commentary and available technical material that Pool Controls shall be connected devices. The widespread availability of modern IoT device technology has decreased costs to connect devices where the cost to make a device be connected is a relatively small fraction of the overall cost to consumers. **9.** Comment acknowledged and some changes made. Staff appreciates the comments and incorporated language that accommodates the suggested edits into an update of the proposed regulatory language. Section 1693(b)(2) was modified in the 15-day modification process to read: "2. Pool controls shall provide local manual control of the pool filter pump start and stop operations, and the start and stop operations of any controlled electric pool heaters or pressure cleaner booster pumps that rely on the circulation provided by the pool filter pump for their operation. 3. Pool controls shall also support setup, selection, and update of its operating schedule via a user interface. a. The user interface may be located on a separate device able to communicate with the pool control via a wireless communications format."

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251003	**Hayward Pool Products** 7/10/2023 **First 15-Day Comment Written** Sam Dose Legislative and Energy Consultant Hayward Industries, Inc. One Hayward Industrial Dr. Clemmons, NC 27012 1-335-712-9900	**1.** Hayward Industries supports the comments submitted by the Pool and Hot Tub Alliance, (PHTA), and offer the following additional comments for your consideration: **2.** Hayward supports PHTA comments and suggestions to align with the existing Energy Star definition as well as the inclusion of additional specific language with examples that would be beneficial to all parties. As referenced by the email clarification from the CEC to PHTA received on June 29, 2023, examples would include, but not be limited to, Wi-Fi, Zigbee, and Bluetooth. **3.** Hayward is in agreement with the CEC proposed revisions to the Pool Control Definition. We believe it adds the needed clarity to the products the CEC would consider to be defined as a pool control and support the inclusion and adoption into this regulation. **4.** We agree with PHTA that this is an area of the 15-day proposed language that marks a substantial new requirement that previously did not exist in prior proposed language nor was requested by industry or the California Investor-Owned Utilities. Simply put, this came as a surprise to industry considering the February 23, 2023, staff report determined not to include FM connectivity. The change appears based on one stakeholder comment, without inquiring from industry if this was something currently done or could be achieved.	**1.** Comment acknowledged. Staff appreciates the comments and incorporated many of the suggested edits into an update of the proposed regulatory language, as discussed above. Staff incorporates by reference its responses to comments by the PHTA here. **2.** Comment acknowledged and accepted. Staff appreciates the comments and partially incorporated the suggested edits into an update of the proposed regulatory language. Staff determined that including specific examples is not required since technologies may become outdated however the regulation is written to allow the evolution of compliant technologies. **3.** Comment acknowledged and accepted. Staff agrees with this comment. Staff appreciates the comments and incorporated many of the previously suggested edits into an update of the proposed regulatory language through the 15-day modification process. **4.** Comment acknowledged and accepted. Staff appreciates the comments, and the radio requirements are removed during an update of the proposed regulatory language.

TN#	Author	Comment	Response
251003	**Hayward Pool Products** 7/10/2023 **First 15-Day Comment Written** Sam Dose Legislative and Energy Consultant Hayward Industries, Inc. One Hayward Industrial Dr. Clemmons, NC 27012 1-335-712-9900	**5.** There are too many unknowns with the application of this technology to make a January 1, 2027, compliance requirement practical or feasible. As noted by PHTA, no industry manufacturer currently produces products with a radio broadcast data system receiver. Hayward agrees with the PHTA suggestion that the CEC remove this requirement in the final regulation. **6.** Hayward supports the PHTA comments and urge the CEC to not rush a rulemaking that in this latest 15- day language has substantive new requirements and many areas that are unclear and could cause interpretation issues. This in turn will negatively affect the program itself, the consumers and the manufacturers who are trying to comply with an ambiguous rule. The suggested PHTA modifications to the latest proposed regulatory language are opportunities for further improvement that we strongly urge the Commission consider before issuing a final rule.	**5.** Comment acknowledged and accepted. Staff agrees with this comment and incorporates its response to comment 4 above by reference here. Staff appreciates the comments, and the radio requirements are removed during an update of the proposed regulatory language. **6.** Comment acknowledged and some changes made. Staff incorporates its responses to PHTA's comments by reference here. Staff agrees with this comment and has determined that stakeholders have been afforded adequate time and information to vet the proposed regulations. This is reflected in the quality of stakeholder comments and the many changes to the proposed regulation that have been made in response to them.

TN#	Author	Comment	Response
251157	**e-Radio USA** 7/10/2023 **First 15-Day Comment Written** Jackson Wang President & CEO e-Radio USA Inc. 303 Twin Dolphin Drive, 6th Floor Redwood City, CA 94065	**1.** e-Radio are pleased to see pool pump FDAS language regarding the optional inclusion of FM technology to 2026 and mandate beginning in 2027. This approach is consistent with Title 24 PCT language from 2007, which enacted would have provided California with GWs of flexible loads desired today. **2**. e-Radio supported the initiative by EPRI to create a plug and play standard for appliances communication. Their early design of this concept won a 2015 CES "Technology for a Better world" award and was first to achieve ECOPORT certification for our Universal Communication Modules. e-Radio believe then and now CTA-2045 can greatly facilitate device manufacturers, technology providers and systems integrators to literally "plug in" various communication technologies to enabled flexible demand appliances. **3.** In some devices such as the EV, the FM (RDS-HD) receiver is already integrated in most brands/models as it already pass data to the in vehicle data bus (CAN etc.) for screen display etc., the databus is also already connected to the charge controller. Therefore, In most if not all cases, software only modifications are needed for FM enabled flexible demand responsive charging. We published an IEEE paper with a major EV OEM on this concept in 2012. E-Radio believe technical standards institutions such as ISO and the IEC have a place to help propagate this solution in response to a common global problem. **4.** As most of the radio broadcast infrastructure already exists, e-Radio believe the California statewide network of FM radio stations can provide coverage greater than 95/95 (%population/%operations) specifications can be built in as little time as 6 months. As there are well over 1000 FM stations currently operating in California, < 10% participation of local stations is needed to meet 95/95.	**1.** Comment acknowledged. Staff appreciates the support, but notes the requirements were eventually removed from the final regulatory language. **2.** Comment acknowledged and no changes made. Staff appreciates the comments and the examples provided by the commenter. No changes to the regulatory language were made in response to this comment – the final language proposed by staff allows but does not mandate use of CTA-2045 (i.e., connection of a communications module to a device through a CTA-2045 connector as a method of complying with connectivity requirements). Staff incorporates its response to comment 1, above, by reference here. **3.** Comment acknowledged and no changes made. Staff appreciates the comments and the examples provided by the commenter. No changes to the regulatory language were made in response to this comment. Staff incorporates its response to e-Radio comment 1, above, by reference here. **4.** Comment acknowledged and no changes made. Staff appreciates the comments and the examples provided by the commenter. No changes to the regulatory language were made in response to this comment. Staff incorporates its response to e-Radio comment 1, above, by reference here.

TN#	Author	Comment	Response
251157	**e-Radio USA** 7/10/2023 **First 15-Day Comment Written** Jackson Wang President & CEO e-Radio USA Inc. 303 Twin Dolphin Drive, 6th Floor Redwood City, CA 94065	**5.** The combination of a low-cost radio receiver chip, which due to "software defined radio" or SDR technique is relatively simple and flexible to deploy and leverages an existing California statewide RDS/HD transmitter network promises a low if not the lowest possible overall capital and operating costs to achieve greater than 95/95 real world population coverage. **6.** FM radio technology has been proven in multiple field studies in California and other states and countries over the past 2 decades. For example the BPA 2008 Water Heater project, which the positive results from the FM-IP (FM broadcast – IP device reporting) hybrid field tests led to the mandate of CTA2045 communication specifications for water heaters sold in Washington and Oregon states today. **7.** FM broadcasting is inherently equitable as everyone and everything could receive authenticated info for free. e-Radio believe there is an opportunity to create a corporate entity such that public interests are inherently aligned and protected via corporate governance as transparency and accountability would be built in, while flexible enough to enable investments to form effective Private-Public-Partnerships (PPP). **8.** e-Radio also foresee PPP to provide technical guidance and assistance to various device OEMs, systems integrators and with resources to assist other jurisdictions rollout their markets such that emissions are reduced and the integration of renewables is fast tracked everywhere.	**5.** Comment acknowledged and no changes made. Staff appreciates the comments and the examples provided by the commenter. No changes to the regulatory language were made in response to this comment. Staff incorporates its response to e-Radio comment 1, above, by reference here. **6.** Comment acknowledged and no changes made. Staff appreciates the comments and the examples provided by the commenter. No changes to the regulatory language were made in response to this comment. Staff incorporates its response to e-Radio comment 1, above, by reference here. **7.** Comment acknowledged and no changes made. Staff appreciates the comments and the examples provided by the commenter. No changes to the regulatory language were made in response to this comment. Staff incorporates its response to e-Radio comment 1, above, by reference here. **8.** Comment acknowledged and no changes made. Staff appreciates the comments and the examples provided by the commenter. No changes to the regulatory language were made in response to this comment. Staff incorporates its response to e-Radio comment 1, above, by reference here.

TN#	Author	Comment	Response
251658	**Xperi Inc** 8/17/2023 **First 15-Day Comment Written** Michael C. Spillner Senior Vice President, Deputy General Counsel Xperi Inc. 2190 Gold Street San Jose, CA 95002 1-408-519-9100	**1.** We propose that digital radio broadcasting over the FM band should be considered as a standard for efficient data delivery, providing cost-effective distribution of information in a one-to-many broadcast data service.	**1.** Comment acknowledged and no changes made. Staff appreciates the comments. No changes to the regulatory language were made in response to this comment. Staff incorporates its response to e-Radio's comment 1, above, by reference here.

TN#	Author	Comment	Response
252208	**Jerome Gilbert** 9/11/2023 **Second 15-Day Comment Written** Jerome Gilbert Project manager, Fleximax Degetel	**1.** ...it's recommended that FM broadcast technology, proven in both the U.S, Europe and around the world, be included for the intelligent energy management of flexible demand responsive appliances... **2.** ...I ask that the FM broadcast systems be reinstated in the final version of the Appliance Standards for Pool Controls.	**1.** Comment acknowledged and no changes made. Staff appreciates the comments. No changes to the regulatory language were made in response to this comment. Staff incorporates its response to e-Radio's comment 1, above, by reference here. **2.** Comment acknowledged and no changes made. Staff appreciates the comments and will continue to analyze the FM broadcast technology for use in FDAS. No changes to the regulatory language were made in response to this comment. Staff incorporates its response to e-Radio's comment 1, above, by reference here.

TN#	Author	Comment	Response
252299	**Pool & Hot Tub Alliance** 9/18/2023 **Second 15-Day Comment Written** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**1.** PHTA suggest the following change: “Connected Device” means any device that can wirelessly communicate via open standards with entities outside the device by means of integrated or separate communicated hardware or software. A device that is able to receive but not send communications is not a connected device. **2.** We simply ask that it be assured there is nothing elsewhere within this new proposed regulation for flexible demand appliance standards that would be inconsistent with and therefore conflict with how California Civil Code Section 1798.140(v) defines personal information. **3.** Add (D) Manually operated on/off switches, circuit breakers and similar devices that are only able to turn the pool filter pump on or off are not considered a pool control. **4.** Add new definition “Safety interlock or shutoff controls” means equipment intended to allow and interrupt power to pool equipment to prevent damage, operation, or startup in an unsafe condition without the means to otherwise control or schedule the operation of a pool filter pump.	**1.** Comment acknowledged and no changes to the regulatory language were made in response to this comment. No changes were necessary given that the definition in section 1691(a) is almost identical to the language suggested and now reads: “Connected device” means any device that can wirelessly communicate via open standards with entities outside the device by means of integrated or separate communications hardware or software. A device that is able to receive but not send communication is not a connected device. **2.** Comment acknowledged and no change made. Staff reviewed definitions in California Civil Code and determined the proposed regulations are not in conflict with the definition commenter cites. Section 1691(a) includes this definition: "Personal information" has the meaning specified in California Civil Code Section 1798.140(v). **3.** Comment acknowledged and no change made. Staff has determined the current text is clear and the suggested changes are unnecessary – circuit breakers and other general purpose manual circuit-level switches do not initiate or manage pool equipment behavior and are not designed, marketed or sold as such. No changes to the regulatory language were made in response to this comment. **4.** Comment acknowledged and no change made. Staff has determined the current text is clear and the suggested changes are unnecessary – the ordinary meaning of phrase “safety interlock or shutoff control” is sufficiently clear and specific that a regulatory definition would create more confusion than it avoids. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
252299	**Pool & Hot Tub Alliance** 9/18/2023 **Second 15-Day Comment Written** Jennifer Hatfield Government Affairs Consultant Pool & Hot Tub Alliance Justin Wiley, PHTA VP of GR, Standards and Codes	**5.** PHTA strongly encourages the Commission to not tie an effective or compliance date to the Department of Energy's (DOE) dedicated purpose pool pump motor (DPPPM) rule. **6.** ...it is critically important to both manufacturers and consumers the Commission consider a four-year effective date from adoption by the Commission. Two years is simply not adequate.	**5.** Comment acknowledged and no change made. Staff incorporates its responses to other comments regarding the effective date by reference here. The identified date, while coinciding with the DOE DPPPM rule, is not otherwise associated with the requirements of the DOE rule and does not create any regulatory conflicts. No changes to the regulatory language were made in response to this comment. **6.** Comment acknowledged and no change made. Staff incorporates its responses to other comments regarding the effective date by reference here. Staff has determined the current effective date is sufficient and the suggested changes are unnecessary. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
252304	**Hayward Pool Products** 9/18/2023 **Second 15-Day Comment Written** Sam Dose Legislative and Energy Consultant Hayward Industries, Inc. One Hayward Industrial Dr. Clemmons, NC 27012 1-335-712-9900	**1.** Hayward Industries supports the comments submitted by the Pool and Hot Tub Alliance, (PHTA), and offer some additional comments for your consideration: **2.** Hayward agrees and supports the PHTA comments and suggests that the term “wireless” be removed from the “Connected Device” definition below. Removal of “wireless” maintains the intent of the device being able to communicate via open standards without the constraints on the method of communication that could restrict other current, such as ethernet and potential future technologies that are capable of otherwise meeting the “Connected Device” requirements. **3.** Hayward agrees and supports the PHTA comments which includes an additional exclusion for manually operated switching devices. **4.** We also support the need to add a definition for Safety Interlock or Shutoff Control	**1.** Comment acknowledged and no changes made. Staff appreciates the comments. Staff incorporates its responses to the comments submitted by the Pool and Hot Tub Alliance by reference here. No changes to the regulatory language were made in response to this comment. **2.** Comment acknowledged and no changes made. Staff disagrees with this comment. Ensuring a wireless communication option is available in all pool controls removes the burden of needing to run a network cable to the pool control or other future FDAS appliance to enable connectivity, and prevents a case where the absence of a preexisting wire thwarts the connectivity of the control. As noted in other comments, especially from PHTA, wireless connectivity is very common in the pool controls industry. No changes to the regulatory language were made in response to this comment. **3.** Comment acknowledged and no changes made. Staff disagrees with this comment and has determined that adding an exclusion for manually operated switching devices could create an unwarranted loophole in the regulations and thwart its purpose. No changes to the regulatory language were made in response to this comment. **4.** Comment acknowledged and no changes made. Staff disagrees with this comment and has determined that the term safety interlock and shutoff control are commonly understood and do not require definitions in the regulation. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
252304	**Hayward Pool Products** 9/18/2023 **Second 15-Day Comment Written** Sam Dose Legislative and Energy Consultant Hayward Industries, Inc. One Hayward Industrial Dr. Clemmons, NC 27012 1-335-712-9900	**5.** In addition, Hayward supports the CEC direction to remove "independently" from the Pool Control definition. If independently were to remain, controls that the CEC intends to include in this regulation could possibly be excluded. **6.** Hayward agrees and supports the PHTA comments and encourages that the Commission does not tie the effective or compliance date of this regulation to publication of the Department of Energy's (DOE) dedicated purpose pool pump motor (DPPPM) rule. The DOE rule and this CEC proposed rule are separate business streams and there are no significant substantive links between the two regulations to justify an alignment of effective or compliance date or an appreciable benefit to manufacturers of such a link. Manufacturers cannot commit design resources to developing compliant products until the final FDAS regulation has been published. If this regulation were tied to the DOE rule and that rule issues prior to the CEC regulation, manufacturers would not be provided the complete time allotted by the CEC to design, test, and manufacture compliant products. Hayward recommends that the effective and compliance date for this regulation be based on the date the Commission adopts the final rule for the Flexible Demand Appliance Standards for Pool Controls.	**5.** Comment acknowledged. Staff agrees with this comment and had previously stricken the word "independently" from the definition of "pool control" in the second 15-day modification process. **6.** Comment acknowledged and no change made. Staff disagrees with this comment. Section 1693(b)(1) proposed that the effective date be, "the earlier of either the compliance date of the federal energy conservation standards for dedicated purpose pool pump motors with motor total horsepower from 1.15 THP to 5 THP or 2 years after adoption by the Energy Commission". As DOE has now published in the Federal Register a compliance date of September 29, 2025, which is earlier than October 18, 2025. In the final language, staff replaced the language with the specific date "September 29, 2025". This alignment does not create any regulatory conflict. Staff incorporates its response to PHTA comment.

TN#	Author	Comment	Response
252306	**California Investor Owned Utilities** 9/18/2023 **Second 15-Day Comment Written** 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	**1.** The CA IOUs appreciate the CEC's revisions to the proposal and support changes to the proposed regulatory language that align with recommendations in prior CA IOU comments. **1a.** The CA IOUs appreciate the CEC's efforts to revise the proposal to include recommendations put forth by the CA IOUs in prior comments on FDAS for pool controls. **1b.** We strongly support the removal of the radio data system definition from this proposal and the removal of the requirement for pool controls to contain radio broadcast data system receivers. **1c**. Additionally, we support moving the operating status communication requirements to the appliance-specific requirements section to clarify how these requirements are applicable to pool controls. **1d.** In the pool control definition, we support the exclusion of pool pump controls that are integral to a single pool filter pump and that only control that device and the exclusion of safety interlock shutoff devices. These exclusions help to address the health and safety concerns expressed in previous stakeholder comments. **1e.** We also appreciate changes to several proposed definitions in the standard that align with prior CA IOU comments and believe that these changes will increase the clarity and enforceability of the regulation.	**1.** Comment acknowledged and no changes made. Staff appreciates the comments and the opportunity to work with stakeholders to refine the regulatory proposal. No changes to the regulatory language were made in response to this comment. **1a.** Comment acknowledged and accepted. Staff appreciates the comments and the opportunity to work with stakeholders to refine the regulatory proposal. No changes to the regulatory language were made in response to this comment. **1b.** Comment acknowledged and accepted. Staff appreciates the comments. The language referenced in the comment was removed in the second 15-day notice. No changes to the regulatory language were made in response to this comment. **1c.** Comment acknowledged and accepted. Staff agrees with this comment and appreciates the support. No changes to the regulatory language were made in response to this comment. **1d.** Comment acknowledged and accepted. Staff agrees with this comment and appreciates the support. No changes to the regulatory language were made in response to this comment. **1e.** Comment acknowledged and no changes made. Staff agrees with this comment and appreciates the support. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
252306	**California Investor Owned Utilities** 9/18/2023 **Second 15-Day Comment Written** 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	**2.** The CA IOUs propose changes to the Definitions in the proposed regulatory language. We propose changes to definitions in section 1691 to improve regulation clarity. The "connected device" definition states that connected devices "can wirelessly communicate." Per the Rules of Construction in section 1690.1, "shall" is used for mandatory provisions while "may" is permissive. The use of "can" in this definition is ambiguous as it does not align with these terms, so its use in the definition could be clarified. **2a.** Furthermore, as stated in prior comments, although this definition would apply to future FDAS, a requirement for wireless communication may not be universally applicable across all appliances as some appliances may use a wired connection for communication. Therefore, we recommend striking the word "wirelessly" from the connected device definition to allow flexibility for future FDAS appliances to connect via other means. **2b.** We recommend striking the "connected ready" device definition from the proposal. The proposal does not require pool controls to be connected ready devices so this term has no regulatory impact. The removal of the definition would allow for this definition to be more thoroughly vetted in any future FDAS rulemaking that may require this functionality in devices. **2c.** Additionally, we would recommend striking references to "connected ready" devices where they appear elsewhere in the proposed regulatory language, including in sections 1694 and 1696. **2d.** We recommend removing the new definitions for "consumer" and "customer" that were added in the revised CEC proposal. The use of the two terms throughout the proposal is sufficiently clear without the added definitions. The new definitions are relatively narrow and may not be suitable for all future FDAS. The FDAS definitions for these terms also differ from other commonly used definitions for these terms, which could create confusion. Removing these definitions and allowing for interpretation of these terms as they are commonly used would be sufficient for the purposes of this regulation.	**2.** Comment acknowledged and no changes made. Staff appreciates the comments but disagrees. Staff has determined the regulatory language is sufficiently clear on this matter, and the wording is intentional: "shall" and "may" are directive, whereas "can" (as used here) is descriptive. No changes to the regulatory language were made in response to this comment. **2a.** Comment acknowledged and no changes made. If in the future another FDAS requires a change, staff is able to address that change during that rulemaking process. No changes to the regulatory language were made in response to this comment. **2b.** Comment acknowledged and no changes made. Staff disagrees with this comment and has determined that maintaining the definition of "connected ready" is necessary, for example, to differentiate between compliant and non-compliant products. Also, future FDAS may employ the "connected ready" definition. No changes to the regulatory language were made in response to this comment. **2c.** Comment acknowledged and no changes made. Staff disagrees with this comment and incorporates its response to comment 2b above by reference here. No changes to the regulatory language were made in response to this comment. **2d.** Comment acknowledged and no changes made. Staff disagrees with this comment and has determined that retaining the definitions adds clarity to the regulation and makes clear that regardless of a person's status as a purchaser/user of an FDAS appliance or customer of a load-serving entity, the ability of both groups to flex their electricity usage is key to FDAS requirements. It also provides clarity in interactions with other laws that may use either or both of these terms. If these definitions need to be modified in future rulemakings, staff will revisit them then. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
252306	**California Investor Owned Utilities** 9/18/2023 **Second 15-Day Comment Written** 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	**2f.** The "pool control" definition could be clarified to reduce ambiguity and reduce redundancy in the language. The current definition nearly duplicates the statement that pool controls have the "capability to start, stop, or otherwise control the operation of a pool filter pump" by additionally stating that they include equipment that "has the capability to schedule the operation or control the start or stop times of a pool filter pump." The definition could be clarified by reverting to the definition proposed in the 45- day language proposal — which did not include controls integral to a single pool filter pump that control only that pump — while maintaining the added exclusion for safety interlock equipment. Therefore, the proposed definition for pool control would read: "Pool control" means any component or group of components including software that: (1) Has the capability to start or stop the operation of a pool filter pump and other pool equipment, and (2) Uses single-phase AC power as input power. "Pool control" excludes: (A) controls marketed exclusively for use as a control for pool filter pumps with a rated hydraulic horsepower (hhp) greater than 2.5 hhp; or (B) safety interlock shutoff controls. **2g.** We recommend modifying the definition of "pool filter pump" to align with the definition of "pool filter pump" used in 20 CCR § 1602 and 10 CFR 431.462. Alternatively, the "pool filter pump" definition could be removed from this regulation and users could then refer to these preexisting related standards to define this term. The definition in the proposed regulatory language departs from the well-understood meaning of this term, and the phrase "other type of end-suction pump motor for the purpose of circulating pool water through a filter or strainer" is undefined and unbounded. This ambiguous language creates the risk of including unintended products in this regulation.	**2f.** Comment acknowledged and no changes made. Staff has determined that the current definition is clear and the suggested changes are not necessary. It is not clear to staff that reverting to the prior definition resolves more issues than it reintroduces, or that doing so would be responsive to the other comments that have shaped this definition during the rulemaking proceeding. No changes to the regulatory language were made in response to this comment. **2g.** Comment acknowledged and no changes made. Staff disagrees with this comment and has determined the differences in the proposed definition are necessary for the FDAS program – staff finds that the definitions in the noted sections of appliance efficiency standards relied heavily on the term "basket strainer", and staff's proposed definition is intentional in not relying on that term or feature as critical to whether a product is a pool filter pump. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
252306	**California Investor Owned Utilities** 9/18/2023 **Second 15-Day Comment Written** 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	**3.** The CA IOUs propose changes to the General Requirements in the proposed regulatory language. We support the CEC's inclusion of cybersecurity provisions in this regulation to help ensure secure data transmission and protection of consumer data. **3a.** We note that the data protection requirement in section 1692(c)(3)(A) is more restrictive than the requirements in the California Consumer Privacy Act of 2018 and may stifle innovation in products. Products may have legitimate reasons to collect personal information that is unrelated to the function of a device; for example, products may offer user-accessible storage of personal information, or they may collect data for research purposes with user consent. We recommend removing the restriction in section 1692(c)(3)(A) on information collection or transmission for uses other than the function of the device and instead deferring to the Consumer Privacy Act for permissible treatment of personal information.	**3.** Comment acknowledged and no changes made. Staff appreciates the support. No changes to the regulatory language were made in response to this comment. **3a.** Comment acknowledged and no changes made. Staff disagrees with this comment and has determined that the proposed change would adversely impact consumer data security and privacy. Staff notes that the provision applies to data collected by the device itself, and does not apply to data collection via phone or tablet applications (including applications that also allow for control of pool equipment). Staff finds that the benefit of preventing miscellaneous personal information from being unnecessarily housed in the device outweighs the desire of some entities to use the pool control device for unrelated data gathering. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
252306	**California Investor Owned Utilities** 9/18/2023 **Second 15-Day Comment Written** 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	**4.** The CA IOUs propose changes to the Appliance Specific Requirements in the proposed regulatory language. We recommend clarifying changes to the effective date in the appliance-specific requirements for pool controls in section 1693(b)(1). Tying the effective date of this standard to the compliance date of a federal standard outside the control of this rulemaking does not provide manufacturers or consumers with certainty on when the effective date for this standard will be. To improve clarity and provide certainty for users of this standard, we recommend striking the following language: "with respect to products manufactured on or after the earlier of either the compliance date of the federal energy conservation standards for dedicated purpose pool pump motors with motor total horsepower from 1.15 THP to 5 THP or". Instead, we recommend that the CEC maintain the following provision: "Effective date. The standards for pool controls shall be effective 2 years after adoption by the Energy Commission." **4a.** Additionally, the clock requirements in section 1693(b)(2)(B)(2) now require a "local manual control" that can start and stop operations of the pool filter pump and any controlled electric pool heaters or pressure cleaner booster pumps. We note that this provision may necessitate an added cost for products without this feature. This feature is not necessary to enable demand flexibility, which can be provided by other means given that a user interface for operation is required in 1693(b)(2)(B)(3). Therefore, we recommend that this requirement be removed from the proposal.	**4.** Comment acknowledged and no change made. Section 1693(b)(1) proposed that the effective date be, "the earlier of either the compliance date of the federal energy conservation standards for dedicated purpose pool pump motors with motor total horsepower from 1.15 THP to 5 THP or 2 years after adoption by the Energy Commission". As DOE has now published in the Federal Register a compliance date of September 29, 2025, which is earlier than October 18, 2025. In the final language, staff replaced the language with the specific date "September 29, 2025". This date is clear and the suggested changes are unnecessary. No changes to the regulatory language were made in response to this comment. **4a.** Comment acknowledged and no changes made. Staff disagrees with this comment and has determined that there is utility to the customer to be able to manually control the equipment, especially in cases where internet connectivity is unavailable/disrupted. Manual controls are also a method for consumers to control when the device operates and thereby flex their energy use. Absent manual controls, customers who do not own smart devices or have stable access to the internet would not be able to effectively flex their energy use. No changes to the regulatory language were made in response to this comment.

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252306	**California Investor Owned Utilities** 9/18/2023 **Second 15-Day Comment Written** 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	**5.** The CA IOUs propose changes to the Data Submittal Requirements in the proposed regulatory language. The data submittal requirements in section 1696 now allow for the submission of a range of "possible" answers rather than clearly stating "permissible" responses for appliances to comply with the standard. Changing the data submittal requirements from "Permissible Answers" to "Possible Answers" creates ambiguity as to what is required and may lead manufacturers to attempt to certify non-compliant products. We recommend aligning the construction of the data submittal requirements with the structure used for appliance efficiency standards (i.e., 20 CCR § 1606 Table X) such that the data submittal requirements clearly reflect requirements for products to be certified under the standard. This change would entail restricting responses for Table A-1, Table A-2, and Table B-1 to "Permissible Answers" and including only permissible responses in the listed responses within these tables.	**5.** Comment acknowledged and no changes made. Staff disagrees with this comment and has determined it is unnecessary because the requirement is clear and will not lead manufacturers to certify non-compliant products. The table lists responses that can be submitted; it must be *possible* for manufacturers to submit truthful information about their products even if it results in a determination that the product does not meet minimum requirements, and thus "possible" was found to be a more accurate term than "permissible". No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
252306	**California Investor Owned Utilities** 9/18/2023 **Second 15-Day Comment Written** 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	**6.** The CA IOUs put forth recommendations for future FDAS rulemakings. The CA IOUs appreciate the CEC's efforts to draft California's first flexible demand appliance standards. For future FDAS rulemakings, we urge the CEC to prioritize appliance flexible demand capabilities such as dispatchability, third-party communication with utilities and aggregators, and the ability to shed, shift, and modulate demand in response to grid needs, in addition to the goal of reducing greenhouse gas (GHG) emissions. **6a.** 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 utilities, authorized third parties, or the CEC's Market Informed Demand Automation Server (MIDAS). **6b.** As noted in prior comments on this topic, the CEC's FDAS should harmonize with other CEC or state efforts, such as the CEC load management standards that will require utilities to maintain up-to- date rate information in the MIDAS database. **6c.** The CEC should incorporate the load management standard requirements into future FDAS rulemakings by requiring FDAS-regulated devices (or devices via their manufacturer clouds) to be able to connect to the MIDAS application programming interface, download relevant rate schedules, GHG signals, or price signals, and schedule device operation in response to these signals. **6d.** We recommend the CEC collaborate with utilities, manufacturers, regulatory agencies, and other stakeholders (e.g., aggregators) in the development of future FDAS to ensure that the standards are consumer-friendly, that they support a balanced and reliable grid, and that they realize the goal of reducing GHG emissions via demand flexibility. **6e.** Specifically, we suggest that the CEC form a workgroup to engage with stakeholders early in the development of future rulemakings and engage in a robust pre-rulemaking process to vet the scope and standards of future proposals.	**6.** Comment acknowledged and no changes made. Staff appreciates the support and comments. Staff agrees that it is important to prioritize future FDAS rulemakings and will continue to do so according to the criteria set forth in PRC 25402(f). No changes to the regulatory language were made in response to this comment. **6a.** Comment acknowledged and no changes made. Staff appreciates the support and comments. No changes to the regulatory language were made in response to this comment. The proposed regulation addresses these issues. **6b.** Comment acknowledged and no changes made. Staff appreciates the comments. No changes to the regulatory language were made in response to this comment. The proposed requirement for pool control connectivity allow pool controls to connect to MIDAS. **6c.** Comment acknowledged and no changes made. Staff appreciates the comments. No changes to the regulatory language were made in response to this comment. The proposed requirement for pool control connectivity allow pool controls to connect to MIDAS. **6d.** Comment acknowledged and no changes made. Staff appreciates the comment and will work continue to work with all of the stakeholders on future FDAS rulemakings. No changes to the regulatory language were made in response to this comment. **6e.** Comment acknowledged and no changes made. Staff appreciates the comments but notes that they are not directed to the proposed regulatory action. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
252850	**California Investor Owned Utilities** 10/18/2023 **Adoption Meeting Comment Oral** Mark Alatorre Pacific Gas and Electric Company	**1.** I'm with PG&E, but I am here to speak on behalf of the California IOUs in total. And I'd like to thank -- we appreciate the CEC's efforts to put forth California's first flexible demand planning centers to reduce greenhouse gas emissions and support a clean and reliable grid. We support flexible demand appliance standards requirements for secure, bidirectional, reliable and open standard base communication that allows devices to receive and respond to demand flexibility signals from utilities, authorized third parties, or the CEC's market informed demand automation server. Further, we recommend that the CEC collaborate early and often with utilities, manufacturers, regulatory agencies and other stakeholders in the development of future flexible demand appliance standards to ensure that the standards are consumer friendly. And that they support a balanced and reliable grid. And that they realize the goal of reducing greenhouse gas emissions by a demand flexibility. So we thank the CEC for the opportunity to comment on this topic and look forward to continued involvement in future rulemakings. Thank you.	**1.** Comment acknowledged and no changes made. Staff appreciates the comments and the opportunity to work with stakeholders to refine the regulatory proposal. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
252850	**Fluidra** 10/18/2023 **Adoption Meeting Comment Oral** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**1.** I'm with Fluidra, a pool equipment manufacturer. And we appreciate the opportunity to participate in the rulemaking process. As a leading manufacturer of connected pool controls, we support the efforts to move the industry into the energy efficient future with flexible demands standards. And we have made several comments, proposals, and requests for clarifications on the proposed regulation in an effort to make a very practical, effective, and meaningful pool control standard. These written comments have already been submitted for public records, so I won't go through them all now. But there are two key points I wanted to emphasize on this final proposal. One, an enforcement date of 2025 is way too fast for our industry. Though many of the regulations IoT requirements may seem rudimentary, and standard on connected devices like cell phones, computers, smart TVs, remember we're not Apple or Google who have five generations of technology already developed and ready to obsolete what's currently in the market. We're pool control manufacturers and our IoT resources are limited. Federal DOE rules have given us four or five years compliance date for a new rule. We believe that is a much more practical timeline for industry to develop, test, validate certify, and launch a new generation of pool controls. We don't want quality problems plaguing our consumers in response to precipitous deadlines. And two, we believe the final rule should allow for both connected, and what you define as connected ready devices, to comply with this final rule. A connected ready device is something that is readily connectable via separate hardware. In our industry that means either Wi-Fi connection through the LAN or RS 45 LAN port on a on the pool control itself. Some consumers may not choose to connect their pool product. They don't have to connect it, so they don't have to spend the money for this additional hardware as long as it's ready to be connected. For those who choose to have it, I think that meets the intent and the spirit of the rule and won't burden the consumer. Manufacturers make more money by forcing the consumer to buy, but I think that's the wrong approach. And we appreciate it, so I think we look forward to further presentation. Thank you.	**1.** Comment acknowledged and no changes made. Staff appreciates the comments and the values the opportunity to work with stakeholders to refine the proposal. No changes to the regulatory language were made in response to this comment. Staff disagrees with this comment to the extent that it requests a longer compliance period. The "effective date" provision of section 1693(b)(1) to require that pool controls manufactured after September 29, 2025, meet the standard, was designed in response to comments like this, for the reasons stated in those comments. This will give manufacturers almost two years after the CEC adopted the regulations to comply, which staff has determined is a reasonable compromise that balances the interests served by the regulation with the reasons advanced by the commenter. Staff also disagrees with this comment regarding the "connected ready" issue. Staff determined that Pool Controls shall be connected devices. The widespread availability of modern IoT device technology has decreased costs to connect devices where the cost to make a device be connected is a relatively small fraction of the overall cost to consumers. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
252850	**Pool & Hot Tub Alliance** 10/18/2023 **Adoption Meeting Comment Oral** Justin Wiley, PHTA VP of GR, Standards and Codes	**1.** And I'm with the Pool and Hot Tub Alliance or PHTA. We represent more than 3,600 company members and over 11,000 individual members nationwide, including manufacturers. One of which you just heard from, a pool pumping equipment controls. PHTA has a long history working with the California Energy Commission and looks forward to the opportunity to continue our relationship during the inaugural implementation of flexible demand appliance standards. Our goal is to provide consumers a quality product and user experience that is compliant and supports the California in the Commission's effort to reduce energy demand and lessen greenhouse gas emissions. During this rulemaking process, we've greatly appreciated CEC staff and their willingness to work with us to incorporate suggestions we submitted in our April and July round of comments. We also submitted comments on the second 15-Day proposed regulatory language suggesting further improvements. For the entirety of those suggestions, I'd refer the Commission to our comments dated September 18. But in the remaining time, I'd like to take the opportunity to highlight a request for additional time to design, test, and manufacture compliant market ready products. The average product development time for manufacturers is approximately four years with a limited number of compliant products or products on the market. We're asking the Commission to consider that four year effective date. This four year date development timeline was recently recognized by the Department of Energy in their dedicated purpose pool pump motor rule for this small motor category where few compliant products currently exist. We're simply asking for the same consideration. In conclusion, we value the hard work and countless hours that CEC staff has put into writing and refining the proposed rule as we pivot toward the implementation process for the first round of flexible demand appliance standards. PHTA appreciates the opportunity to work with CEC on issues that may arise. Thank you very much for your attention.	**1.** Comment acknowledged and no changes made. Staff appreciates the comments and the values the opportunity to work with stakeholders to refine the proposal. No changes to the regulatory language were made in response to this comment. Staff disagrees with this comment to the extent that it requests a longer compliance period. The "effective date" provision of section 1693(b)(1) to require that pool controls manufactured after September 29, 2025, meet the standard, was designed in response to comments like this, for the reasons stated in those comments. This will give manufacturers almost two years after the CEC adopted the regulations to comply, which staff has determined is a reasonable compromise that balances the interests served by the regulation with the reasons advanced by the commenter. No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
252679	**Ryan Todd** 10/23/2023 **Post Adoption Meeting Comment Written**	**1.** The text of new 1690(a) or 1693(b)(1) does not actually say that ONLY pool pumps compliant with this article are allowed for sale (after certain date). The text says the article "applies to... types", it but does not expressly prohibit sale of other types. Perhaps this nuance is intentional. If the CEC wants to prohibit sale of less efficient pool pumps, this language does not expressly say that.	**1.** Staff objects to this comment because it was submitted after the Commission adopted the Pool Controls FDAS at its October 18, 2023, Business Meeting. Without waiving this objection, Staff responds as follows. Staff directs the commenter's attention to section 1697(a) which provides: "(a) Compliance and Enforcement. (1) Any unit of any appliance subject to this Article may be sold or offered for sale, rented, imported, distributed or leased for use in California regardless of the physical location of the seller and includes, without limitation, transactions conducted over telephone or the internet, only if it complies with the requirements of this Article, including, but not limited to the following: (A) the appliance appears in the most recent active FAD established pursuant to section 1695(c) of this Article; (B) the manufacturer has: 1. tested the appliance as required by section 1693 of this Article; 2. marked the unit as required by section 1693 of this Article; 3. for any appliance for which there is an applicable standard in section 1693 of this Article, certified under section 1695(a) of this Article that the appliance complies with the standard; (C) the unit has the same components, design characteristics, and all other features that affect flexibility, as applicable, as the units that were tested under section 1693 of this Article or for which information was submitted under section 1695(a) of this Article; and (D) for any appliance for which there is an applicable standard in section 1693 of this Article, the unit complies with the standard. (2) The Executive Director and Energy Commission may take any action authorized by statute or Energy Commission regulations to address or prevent any violation of this Article." No changes to the regulatory language were made in response to this comment.

TN#	Author	Comment	Response
253568	**Fluidra** 9/18/2023 **Second 15-Day Comment Written** **Late comment due to improper filing [underline as presented in comment]** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**1.** Fluidra proposes the following revisions to the definitions in order to clarify the intent of what is "in scope" and "out of scope". Integral pool filter pump control or pump motor control Fluidra suggests to keep the definition of "integral" as shown below. "Integral", when used with respect to pool controls, means controls that are an integral part of a pump or pump motor. Integral controls may be capable of being removed and may be sold separately from the pump or pump motor. The term is used in the proposed exclusion "(C) controls integral to a single pool filter pump or pump motor that are capable of controlling only that pump or motor." The definition serves to clarify the intent of the scope, and also clarifies that the integral pump motor control is removable for remote mounting and replacement. This is critical for installations with limited access to the pool pump, a user can mount the pool pump control in a more safely accessible location proximate to the pump. Also, being able to replace an inoperable pump control, instead of the entire motor/pump assembly, is an important cost saving benefit for consumers.	**1.** Staff objects to this comment because it was not timely. Without waiving this objection, staff responds as follows. Staff appreciates the comments and the values the opportunity to work with stakeholders to refine the proposal. No changes to the regulatory language were made in response to this comment. Staff determined a regulatory definition of integral was not needed because the plain language use of integral provides the needed clarity. Staff previously included a definition for "integral"; however, during a subsequent revision staff incorporated stakeholder feedback into the final definitions and the regulatory definition of integral was removed reasons identified in and in response to those comments and because staff determined the definition was not necessary because it is commonly understood in the industry.

TN#	Author	Comment	Response
253568	**Fluidra** 9/18/2023 **Second 15-Day Comment Written** **Late comment due to improper filing** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**2**. Pool Control Fluidra supports the PHTA proposed definition of “Pool control”. – With regards to the original CEC proposed language, there is concern that CEC is making “Pool controls” and “Pool pump controls” synonymous. In other words, anything that controls a single pool filtration pump is within the scope of the regulation which may or may not be the intention. In previously submitted comments and discussions with CEC, Fluidra and PHTA expressed the importance of using “Pool Controls”, also known as “Pool Automation” systems, for the purposes of Flexible Demand due to critical safety and liability concerns of altering and/or interrupting the pool filtration pump without consideration to the rest of the pool equipment. In addition to the Pool Filtration Pump, Pool automation systems are designed to talk to the other critical equipment on a pool pad such as water chemistry analyzers, chemical feeders, chlorinators, and heaters which rely on water circulation for safe operation and maintaining water chemistry. A controller that only talks to the filtration pump, and no other piece of pool equipment, may present safety and liability risks when used for Flexible Demand. We remind CEC to consider these practical safety concerns as the final language for this regulation is being considered. PHTA proposed definition of “Pool control”: “Pool control” means equipment with the capability to start, stop, or otherwise control the operation of a pool filter pump and includes, but is not limited to, a pool timer, pool pump switch, heater switch, direct load control switch, or any component or group of components, including software, that has the capability to schedule the operation or control the start or stop times of a pool filter pump. Pool controls may control other pool equipment in addition to a pool *filter* pump. 1. Pool control excludes: (A) controls marketed exclusively for use as a control for pool filter pumps with a rated hydraulic horsepower (hhp) greater than 2.5 hhp; or (B) safety interlock of or shutoff controls; or (C) controls integral to a single pool filter pump or pump motor that are capable of controlling only that pump or motor; or (D) Manually operated on/off switches, circuit breakers and similar devices that are only able to turn the pool filter pump on or off are not considered a pool control.	**2.** Staff objects to this comment because it was not timely. Without waiving this objection, staff responds as follows. Staff agrees with most of this comment. Staff appreciates the comments and incorporated many of the previously suggested edits into an update of the proposed regulatory language through the 15-day modification process. However, staff has determined that the addition of (D) is unnecessary and confusing because the term “pool control” necessarily includes manual switches and the like.

TN#	Author	Comment	Response
253568	**Fluidra** 9/18/2023 **Second 15-Day Comment Written Late comment due to improper filing** Philip Escobedo Fluidra – Director of Regulatory Compliance 2882 Whiptail Loop #100 Carlsbad, CA 92010 1-800-822-7933 FluidraUSA.com	**3.** COMMUNICATION REQUIREMENTS Fluidra suggests the following edit to the communication requirements Section 1693 (b)(2)(A). (A) Communication Requirements. 1. Pool controls shall be connected devices or connected ready devices. Pool controls, or Pool Automation Systems, can be modular systems with the means for connectivity being separable hardware. Being able to sell these systems separately is important to consumers and the life of these products because it allows a consumer who already has a connected pool pad to upgrade their pool automation system without the need to repurchase the connectivity hardware they already have. In addition, as communication protocols and reliability are updated, a consumer can purchase the most up to date connection hardware separately. Or if a consumer does not wish to connect their pool automation system, then they do not need to spend the money to purchase hardware they will not use. So long as the system is "connected ready", we believe this meets the intent of this regulation. Section 1693 (b)(6)(C) Communication Fluidra requests further clarification on requirements for communication capabilities. Request definition for "operating status" -- On/off? Power Consumption? Speed? Request clarification on "stored schedule". Only the current operating schedule, or all schedules within the pool control? Section 1694 (b) Fluidra requests further clarification on the communication link capabilities: Request definition for "shift Request definition for "curtail" -- On/off? Turn down pump? Turn off heater? Reduce overall power consumption of all pool equipment? Request clarification on "changes to equipment operation or schedule". What kind of operating changes will be necessary via communication link? **4.** EFFECTIVE COMPLIANCE DATE Fluidra fully supports PHTA's suggest to not tie the effective compliance date to the Federal DOE pool pump motor rule. These are two distinct product/business streams that do not need to be tied together for purposes of this regulation. Fluidra also supports and agrees with PHTA's estimated development timeframe of four years to develop, qualify, test, certify, and launch new products into the marketplace. We urge CEC to consider this when finalizing an effective compliance date.	**3.** Staff objects to this comment because it was not timely. Without waiving this objection, staff responds as follows. Staff proposed inclusion of provisions for "connected ready" pool controls in an early revision of the proposed regulatory language, however received commentary on those provisions led staff to subsequently remove reference to "connected ready" products and instead modify the effective date for requiring connected devices. Staff determined that the widespread availability of modern IoT device technology has decreased costs to connect devices, such that the cost to make a device be connected is a relatively small fraction of the overall cost to consumers. Staff objects to the remainder of the comment because it is not specifically directed at the proposed regulation, or the procedures followed in adopting it. Without waiving this objection staff responds as follows. Staff has determined that the regulatory language is sufficiently clear and will foster stakeholders' innovation. **4.** Staff objects to this comment because it was not timely. Without waiving this objection, staff responds as follows. Staff appreciates the comments and the values the opportunity to work with stakeholders to refine the proposal. Staff disagrees with this comment to the extent that it requests a longer compliance period. The "effective date" provision of section 1693(b)(1) to require that pool controls manufactured after September 29, 2025, meet the standard, was designed in response to comments like this, for the reasons stated in those comments. This will give manufacturers almost two years after the CEC adopted the regulations to comply, which staff has determined is a reasonable compromise that balances the interests served by the regulation with the reasons advanced by the commenter. No changes to the regulatory language were made in response to this comment.