

DOCKETED

Docket Number:	20-FDAS-01
Project Title:	Flexible Demand Appliance Standards
TN #:	245749
Document Title:	e-Radio comments to June 2022 Pool Control draft
Description:	N/A
Filer:	System
Organization:	Jackson Wang
Submitter Role:	Public
Submission Date:	8/31/2022 5:55:19 AM
Docketed Date:	8/31/2022

Comment Received From: Jackson Wang
Submitted On: 8/31/2022
Docket Number: 20-FDAS-01

e-Radio comments to June 2022 Pool Control draft

Additional submitted attachment is included below.



August 31, 2022

To: California Energy Commission Dockets Office

Re: Docket # 20-FDAS-01 Request for Comments on the CEC's Flexible Demand Appliance Standards

e-Radio USA, Inc. (e-Radio) appreciates and supports the opportunity to provide comments on the California Energy Commission's proposed Flexible Demand Appliance Standards (FDAS).

e-Radio is a communications technology company specializing in broadcast-based systems. We are pleased to have the opportunity to share our experience related to flexible demand appliances and to comment on the June draft of Analysis of Flexible Demand Standards for Pool Controls as part of the 20-FDAS-01 docket.

A summary of our comments is listed here, followed by brief discussion of each recommendation.

1. In the definition of "connected device," include default connectivity through authenticated FM broadcast, with optional remote control and data reporting via Wi-Fi, LTE, cable, etc.
2. Include discussion of hybrid digital FM opportunities including software updates for devices
3. Include discussion of the potential use of FM broadcasting for cybersecurity
4. Include results of relevant flexible pool pump tests outside California

1. In the definition of "connected device," include default connectivity through authenticated FM broadcast, with optional remote control and data reporting via Wi-Fi, LTE, cable, etc.

For example, a potential 2-way system might use FM broadcast to notify homes of electricity prices and other grid signals, and (optionally) use cable sensing for outbound confirmation of response. Because the needed infrastructure is already in place, such a system could be implemented and function at very low cost. With statewide broadcast costs as low as \$1 per home per year and cable sensing at about 5 cents per home per year, the annual cost to Californians for statewide mass-market demand flexibility would be negligible.

Currently, the Texas Public Utilities Commission (TPUC) is developing an aggregated DER pilot to increase grid resiliency.¹ The three-year pilot is expected to kick off in 2023 in collaboration with the Electric Reliability Council of Texas (ERCOT), transmission and distribution companies, retail electricity providers, and DER providers. The pilot planning team is giving special consideration to actions that can be implemented immediately. The proposed pilot currently includes:²

- Broadcast of ANSI/SCTE 267-based DER Guidance Signals via FM Radio Data System and HD Radio
- Distribution of plug-and-play EV charging adapters that are compatible with all EVs and chargers
- Smart meter data analysis to quantify load shaping and electricity savings

¹ TPUC dockets 51603 and 53911

² PUCT 51603-14

2. Include discussion of hybrid digital FM opportunities including software updates for devices

Table 2-2 of the “DRAFT STAFF REPORT Analysis of Flexible Demand Standards for Pool Controls” (the Report) lists TCP/IP, OpenADR, CTA-2045, IEEE 802, Z-Wave, LoRaWAN, Matter, and Radio Broadcast Data System connectivity standards as potential technologies to meet the FDAS connectivity requirements. We recommend that HD Radio digital radio broadcast ([NRSC-5-B](#)) be added to this table as the official standard for the in-band-on-channel (IBOC) technology used in U.S. markets.³

Starting in 2022, one of the large California investor-owned utilities is kicking off a water heater program using CTA-2045 utility communication modules (UCMs) with hybrid digital FM, Wi-Fi, and LTE communication capabilities. The CEC should consider leveraging this fleet of multi-radio UCMs to test signal reception, load response, and enhanced cybersecurity applications.

3. Include discussion of the potential use of FM broadcasting for cybersecurity

Page 6 of the Report states “The standards will also enhance cybersecurity of internet connected appliances that are subject to the proposed standards.” Cybersecurity via FM Broadcasting can potentially provide enhanced IOT cybersecurity as stated in e-Radio FDAS comments dated November 1, 2021. One of the United States National Labs is investigating broadcast-based cybersecurity applications, including but not limited to multifactor authentication (MFA) and IOT cybersecurity protection for residential and industry control systems. In addition, the Advanced Water Heater Initiative (AWHI) is considering the funding of an effort to develop a white paper on FM-based cybersecurity for use in national standards.

4. Include results of relevant flexible pool pump tests outside California

From 2015-2018, one of the largest IOUs in the United States successfully tested CTA-2045 UCMs with FM capability. We would be pleased to assist in obtaining permission to release field data from those tests for CEC analysis. If the FDAS team is interested, please contact me for more information.

Thank you for your consideration.

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³ <https://www.nrscstandards.org/standards-and-guidelines/documents/archive/nrsc-5-b/nrsc-5-b.asp>