DOCKETED	
Docket Number:	20-AAER-03
Project Title:	Amend Title 20 Computer and Monitor Regulations
TN #:	236828
Document Title:	Office of Administrative Law Approval
Description:	OAL Approval Notice, Final Form 400, and Final Approved Express Terms
Filer:	Corrine Fishman
Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	2/18/2021 7:19:40 AM
Docketed Date:	2/18/2021

State of California
Office of Administrative Law

In re: **California Energy Commission** **Regulatory Action:** **Title 20, California Code of Regulations** **Adopt sections:** **Amend sections:** **Repeal sections:**	**NOTICE OF APPROVAL OF REGULATORY ACTION** **Government Code Section 11349.3** **OAL Matter Number: 2020-1218-03** **OAL Matter Type: Regular (S)**

In this regular rulemaking action the California Energy Commission amends four sections related to computer and computer monitor energy efficiency standards and testing.

OAL approves this regulatory action pursuant to section 11349.3 of the Government Code. This regulatory action becomes effective on 12/9/2021.

Date: February 3, 2021

Amy R. Gowan
Attorney

For: Kenneth J. Pogue
Director

Original: Drew Bohan, Executive Director
Copy: Corrine Fishman

STATE OF CALIFORNIA—OFFICE OF ADMINISTRATIVE LAW

NOTICE PUBLICATION/REGULATIONS SUBMISSION REGULAR (See instructions on reverse)

STD. 400 (REV. 10/2019)

For use by Secretary of State only

ENDORSED - FILED
in the office of the Secretary of State
of the State of California

FEB 03 2021

1:21 PM

OAL FILE NUMBERS	NOTICE FILE NUMBER	REGULATORY ACTION NUMBER	EMERGENCY NUMBER
	Z-2020-0922-02	2020-1218-03S	

For use by Office of Administrative Law (OAL) only

2020 DEC 18 P 4:00

OFFICE OF ADMINISTRATIVE LAW

NOTICE | REGULATIONS

AGENCY WITH RULEMAKING AUTHORITY
California Energy Commission

AGENCY FILE NUMBER (If any)
20-AAER-03

A. PUBLICATION OF NOTICE (Complete for publication in Notice Register)

1. SUBJECT OF NOTICE	TITLE(S)	FIRST SECTION AFFECTED	2. REQUESTED PUBLICATION DATE
Computers and Computer Monitors	20	1602	October 2, 2020

3. NOTICE TYPE	4. AGENCY CONTACT PERSON	TELEPHONE NUMBER	FAX NUMBER (Optional)
☒ Notice re Proposed Regulatory Action ☐ Other	Corrine Fishman	916-690-5000	

OAL USE ONLY	ACTION ON PROPOSED NOTICE	NOTICE REGISTER NUMBER	PUBLICATION DATE
	☐ Approved as Submitted ☐ Approved as Modified ☐ Disapproved/ Withdrawn		

B. SUBMISSION OF REGULATIONS (Complete when submitting regulations)

1a. SUBJECT OF REGULATION(S)
Computers and Computer Monitors

1b. ALL PREVIOUS RELATED OAL REGULATORY ACTION NUMBER(S)

2. SPECIFY CALIFORNIA CODE OF REGULATIONS TITLE(S) AND SECTION(S) **(Including title 26, if toxics related)**

SECTION(S) AFFECTED (List all section number(s) individually. Attach additional sheet if needed.)

TITLE(S): 20

ADOPT:

AMEND: 1602, 1604, 1605.3, 1606,

REPEAL:

3. TYPE OF FILING

- ☒ Regular Rulemaking (Gov. Code §11346)
- ☐ Certificate of Compliance: The agency officer named below certifies that this agency complied with the provisions of Gov. Code §§11346.2-11347.3 either before the emergency regulation was adopted or within the time period required by statute.
- ☐ Emergency Readopt (Gov. Code, §11346.1(h))
- ☐ Changes Without Regulatory Effect (Cal. Code Regs., title 1, §100)
- ☐ Resubmittal of disapproved or withdrawn nonemergency filing (Gov. Code §§11349.3, 11349.4)
- ☐ File & Print
- ☐ Print Only
- ☐ Emergency (Gov. Code, §11346.1(b))
- ☐ Resubmittal of disapproved or withdrawn emergency filing (Gov. Code, §11346.1)
- ☐ Other (Specify)

4. ALL BEGINNING AND ENDING DATES OF AVAILABILITY OF MODIFIED REGULATIONS AND/OR MATERIAL ADDED TO THE RULEMAKING FILE (Cal. Code Regs. title 1, §44 and Gov. Code §11347.1)
per agency request

5. EFFECTIVE DATE OF CHANGES (Gov. Code, §§ 11343.4, 11346.1(d); Cal. Code Regs., title 1, §100)

- ☐ Effective January 1, April 1, July 1, or October 1 (Gov. Code §11343.4(a))
- ☐ Effective on filing with Secretary of State
- ☐ §100 Changes Without Regulatory Effect
- ☒ Effective other (Specify) PRC 24502(c) - 12/9/21

6. CHECK IF THESE REGULATIONS REQUIRE NOTICE TO, OR REVIEW, CONSULTATION, APPROVAL OR CONCURRENCE BY, ANOTHER AGENCY OR ENTITY

- ☐ Department of Finance (Form STD. 399) (SAM §6660)
- ☐ Fair Political Practices Commission
- ☐ State Fire Marshal
- ☐ Other (Specify)

7. CONTACT PERSON	TELEPHONE NUMBER	FAX NUMBER (Optional)	E-MAIL ADDRESS (Optional)
Corrine Fishman, Regulations Manager	916-690-5000		corrine.fishman@energy.ca.gov

8. I certify that the attached copy of the regulation(s) is a true and correct copy of the regulation(s) identified on this form, that the information specified on this form is true and correct, and that I am the head of the agency taking this action, or a designee of the head of the agency, and am authorized to make this certification.

SIGNATURE OF AGENCY HEAD OR DESIGNEE
Drew Bohan
Digitally signed by Drew Bohan
Date: 2020.12.18 14:25:41 -08'00'

DATE

TYPED NAME AND TITLE OF SIGNATORY
Drew Bohan, Executive Director

For use by Office of Administrative Law (OAL) only

ENDORSED APPROVED

FEB 03 2021

Office of Administrative Law

Proposed Regulatory Language

California Code of Regulations

Title 20. Public Utilities and Energy

Division 2. State Energy Resources Conservation and Development Commission

Chapter 4. Energy Conservation

Article 4. Appliance Efficiency Regulations

Proposed new language appears as underline (example) and proposed deletions appear as strikeout (~~example~~). Existing language appears as plain text. Three dots or "…" represents the substance of the regulations that exists between the proposed language and current language.

1602. Definitions.

…[skipping *(a)* through *(u)*]

(v) Computers, Computer Monitors, Televisions, Signage Displays, and Consumer Audio and Video Equipment.

…[skipping *Add-in card* through *Computer sleep mode*]

"Computer with cyclical behavior" means a notebook computer or portable all-in-one computer that periodically charges and discharges its battery while connected to a mains power source, creating power mode loads that are cyclical or pulsing in that they are stable for a period, often many minutes, and then the power varies over a cycle, making it necessary to measure at least one full charge and discharge cycle when determing the average power.

…[skipping *Desktop computer* through *Expandability score (ES)*]

"Fast refresh rate gaming monitor" means a gaming monitor with a supported refresh rate of 300Hz or more that includes incremental hardware-based assistance.

…[skipping *First discrete GPU* through *Monitor screen area*]

"Multi-screen notebook" means a computer that resembles a notebook computer, with a clam shell form factor and which has a secondary integrated display with touch and/or pen capability and that can be used as a touch screen keyboard in place of a mechanical keyboard.

…[skipping *Native resolution* through *Native vertical resolution*]

"Notebook computer" means a computer designed specifically for portability and to be operated for extended periods both with and without a direct connection to an AC mains power source. A notebook computer is sold with an integrated display and a physical keyboard. The term "notebook computer" includes two-in-one notebooks, mobile thin clients, multi-screen notebooks , and notebook computer models with touch-sensitive screens. Notebook computer does not include mobile workstations or mobile gaming systems.

...[skipping *On mode* through the end of section 1602]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26 and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c), 25402.5.4, and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

1604. Test Methods for Specific Appliances.

...[skipping (a)-(u)]

(v) Computers, Computer Monitors, Televisions, Signage Displays, and Consumer Audio and Video Equipment.

...[skipping *(1)-(3)*]

(4) Computers. The test method for computers is the ENERGY STAR Program Requirements for Computers, Final Test Method (Rev. March-2016), with the following modifications:

...[skipping *(A)-(I)*]

(J) For multi-screen notebooks, configure each integrated display in the same way as the display of the units with one integrated display. The displays do not have to be configured sequentially (i.e. warmup times can be done simultaneously for all integrated displays).

(K) For computers with cyclical behavior where operation without a battery pack when connected to the mains power source is not a supported configuration and where the normal measurement time would not capture one or more complete cycles, short-idle, long-idle, sleep, and off mode power measurements shall be tested in a modified manner from the test procedure described in IEC 62623:2012:

1. Short-idle mode testing: The short idle test duration shall be extended long enough to capture the energy consumption over one or more complete cycles.

The unit shall be kept in short idle through minimal user input such as moving the mouse or pressing a key that does not perform any action (e.g., shift, ctrl, tab, etc).

2. Long-idle mode testing: The long idle mode test duration shall be extended long enough to capture the energy consumption over one or more complete cycles. The unit under test shall remain in long idle during the entire time of the extended test by disabling the sleep mode.

3. Sleep mode testing: The computer sleep mode power shall be tested after restarting the computer and ensuring that the sleep mode is enabled. Instead of measuring power after manually entering sleep mode, the power measurement shall begin no sooner than 30 minutes and no later than 31 minutes of user inactivity on the unit under test. Sleep mode power measurement shall be taken over an extended period of time that is long enough to capture the energy consumption over one or more complete cycles.

4. Off mode testing: The off mode test duration shall be extended long enough to capture the energy consumption over one or more complete cycles.

...[skipping *(w) to end of section*]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26 and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).
Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

1605.3. State Standards for Non-Federally-Regulated Appliances.

...[skipping (a)-(u)]

(v) Computers, Computer Monitors, Televisions, Signage Displays, and Consumer Audio and Video Equipment.

...[skipping *(1)-(3)*]

(4) Computer monitors. Computer monitors manufactured on or after July 1, 2019, shall comply with all of the following:

(A) The computer monitor on-mode power draw shall be less than or equal to the following equation with each of the applicable allowances applied at most once:

$E_{on} \leq (E_{on\_max} + E_{EP} + E_{Game} + E_{FRRG} + E_{OLED} + E_{Curve})$

Where:

E_{on} is the computer monitor on-mode power draw in watts as determined under Section 1604(v)(3) of this Article,

E_{on_max} is the maximum on-mode power draw in watts as determined by Table V-4,

E_{EP} is the enhanced performance display allowance in watts as determined in Table V-5,

E_{Game} is the gaming monitor allowance in watts as determined in Table V-5,

E_{FRRG} is the fast refresh rate gaming monitor allowance in watts as determined in Table V-5,

E_{OLED} is the OLED monitor allowance in watts as determined in Table V-5, and

E_{Curve} is the curved monitor allowance in watts as determined in Table V-5.

...[skipping *(B)-(D)*]

...[skipping *Table V-4*]

Table V-5

List of Potentially Applicable Allowances

Allowance	*Computer Monitor Type*	*Models manufactured on or after July 1, 2019, and before January 1, 2021*	*Models manufactured on or after January 1, 2021*
... [skipping E_{EP} through E_{Game}]			
E_{FRRG}	Fast refresh rate gaming monitor with MRR less than 480 Hertz	0	[0.0025*(MRR-300) + 0.25]* E_{on-max}
	Fast refresh rate gaming monitor with MRR of 480 Hertz or more	0	0.7* E_{on-max}
... [skipping E_{OLED} through E_{Curve}]			
Where "MRR" is the maximum refresh rate in Hertz.			

...[skipping *EXCEPTIONS to section 1605.3(v)(4)*]

(5) Desktop computers, thin clients, mobile gaming systems, portable all-in-ones, and notebook computers. Desktop computers, thin clients, mobile gaming systems, portable all-in-ones, and notebook computers manufactured on or after January 1, 2019, shall:

…[skipping *(A)-(B)*]

…[skipping *EXCEPTION to section 1605.3(v)(5)(B) through EXCEPTION to section 1605.3(v)(5)(A)*]

…[skipping Table V-6 through Table V-7]

Table V-8

List of Potentially Applicable Adders

Function	*Desktop Computer, Mobile Gaming System, and Thin Client Adder (kWh/yr)*	*Notebook Computers and Portable All-In-One Adder (kWh/yr)*
… [skipping System Memory through Storage device other than main storage device]		
Integrated Display Where: "d" is the diagonal measurement of the display in inches "r" is the megapixel resolution of the display "A" is the viewable screen area in square inches EP=0 for displays that are not enhanced performance displays <u>For a multi-screen notebook, this adder is applied for each integrated display that is enabled when shipped and shall show the same test image during testing.</u>	For d≤20: (8.76*0.35*(1+EP)* [(4.2*r)+5.7])*0.8 For 20<d<23: (8.76*0.35*(1+EP)* [(4.2*r)+(0.02*A)+2.2])*0.8 For 23≤d<25: (8.76*0.35*(1+EP)* [(4.2*r)+(0.04*A)-2.4])*0.8 For 25≤d: (8.76*0.35*(1+EP)* [(4.2*r)+(0.07*A)-10.2])*0.8 r=6 for resolutions greater than 6 megapixels. Before July 1, 2021: EP=0.3 for displays with a color	8.76*0.3*(1+EP)* [(0.43*r)+(0.0263*A)] r=6 for resolutions greater than 6 megapixels. EP=0.4 for displays with a color gamut support of 38.4% of CIELUV or greater (99% or more of defined Adobe RGB colors).

	gamut support of 32.9% of CIELUV or greater (99% or more of defined sRGB colors); and EP=0.75 for displays with a color gamut support of 38.4% of CIELUV or greater (99% or more of defined Adobe RGB colors). On or after July 1, 2021: EP=0.2 for displays with a color gamut support of 32.9% of CIELUV or greater (99% or more of defined sRGB colors); and EP=0.6 for displays with a color gamut support of 38.4% of CIELUV or greater (99% or more of defined Adobe RGB colors).	
… [skipping First Discrete GPU that is not packaged on the same substrate as the GPU (on or after January 1, 2019 and before July 1, 2021) Where "B" is frame buffer bandwidth measured in GB/s through video surveillance card]		
Wired Ethernet with a transmit rate of greater than 1 Gb/s and less than 10 Gb/s that is not an Add-in card	4 per computer	0
… [skipping Wired Ethernet or Fiber Card with a transmit rate of 10Gb/s or greater to the end of Table V-8]		

. . .[skipping to the end of section 1605.3]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26 and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).

1606. Filing by Manufacturers; Listing of Appliances in the MAEDbs

…[skipping (a) throughTable X Section V Consumer Audio and Video Equipmement]

	Appliance	*Required Information*	*Permissible Answers*
V	Computer Monitors	… [skipping Backlight Type through Gaming Monitor w/o Incremental Hardware]	
		<u>Fast refresh rate gaming monitor</u>	<u>True/False</u>
		<u>Maximum Refresh Rate (Hz)</u>	
		… [skipping KMM_KVM through end of computer monitors]	
	Skipping Medical Computer Monitors		
	Computers (Cont'd.) <u>(Note: Units with more than one integrated display must certify related data for each screen)</u>	…[skipping Computer Type through Integrated Display]	
		<u>Multi-screen notebook</u>	<u>True, False</u>
		<u>Number of integrated screens</u>	
		Color Gamut (if computer has integrated display)	>32.9% of CIELUV (99% or more of defined sRGB colors), >38.4% of CIELUV (99% or more of defined Adobe RGB colors), <32.9% of CIELUV
		Diagonal Screen sizes (inches) (if computer has integrated display)	

		Viewable screen area (square inches) (if computer has integrated display)	
		Resolution (megapixels) (if computer has integrated display)	
		Enhanced Performance (if computer has integrated display)	True, False
		…[skipping Length of time use inactivity before computer entering sleep (minutes) through Length of time use inactivity before placing display into sleep (minutes)]	
		Notebook computer with Cyclical behavior	True, False
		Operation of the notebook computer without a battery pack is a supported configuration when connected to the mains power source	True, False
		One complete cycle of battery charging and discharging in computer short-idle mode (hours:minutes:seconds) (Applies only to notebook computers with cyclical behavior where operation without a battery pack is not a supported configuration when connected to the mains power source)	
		Computer short-idle mode test duration (hours:minutes:seconds) (Applies only to notebook computers with cyclical behavior where operation without a battery pack is not a supported configuration when connected to the mains power source)	
		One complete cycle of battery charging and discharging in	

		computer long-idle mode (hours:minutes:seconds) (Applies only to notebook computers with cyclical behavior where operation without a battery pack is not a supported configuration when connected to the mains power source)	
		Computer long-idle mode test duration (hours:minutes:seconds) (Applies only to notebook computers with cyclical behavior where operation without a battery pack is not a supported configuration when connected to the mains power source)	
		One complete cycle of battery charging and discharging in computer sleep mode (hours:minutes:seconds) (Applies only to notebook computers with cyclical behavior where operation without a battery pack is not a supported configuration when connected to the mains power source)	
		Computer sleep mode test duration (hours:minutes:seconds) (Applies only to notebook computers with cyclical behavior where operation without a battery pack is not a supported configuration when connected to the mains power source)	
		One complete cycle of battery charging and discharging in computer off mode (hours:minutes:seconds) (Applies only to notebook computers with cyclical behavior where operation without a battery pack is not a supported	

		configuration when connected to the mains power source)	
		Computer off mode test duration (hours:minutes:seconds) (Applies only to notebook computers with cyclical behavior where operation without a battery pack is not a supported configuration when connected to the mains power source)	
		Wired Ethernet port with a transmit rate of more than 1 Gb/s and less than 10 Gb/s that is not an Add-in card	True, False
		Data transmission rate of wired Ethernet port with a transmit rate of more than 1 Gb/s and less than 10 Gb/s that is not an Add-in card (Gb/s)	
… [skipping Energy Efficient Ethernet Capability to the end of Table X]			

…[skipping to the end of section 1606]

Note: Authority cited: Sections 25213, 25218(e), 25401.9, 25402(a)-25402(c) and 25960, Public Resources Code; and Sections 16, 26 and 30, Governor's Exec. Order No. B-29-15 (April 1, 2015).

Reference: Sections 25216.5(d), 25401.9, 25402(a)-25402(c), 25402.5.4 and 25960, Public Resources Code; and Section 16, Governor's Exec. Order No. B-29-15 (April 1, 2015).