

DOCKETED

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Project Title:	Commercial and Industrial Air Compressors
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Document Title:	Proposed Express Terms
Description:	Proposed regulations for commercial and industrial air compressors.
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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
Sections 1601- 1609
As related to commercial and industrial air compressors

November 16, 2018

The proposed new language appears as underline (example) and proposed deletions appear as strikethrough (~~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.

Language shown in italics (*example*) is language proposed by the Energy Commission related to portable air conditioners, docket number 18-AAER-04, and published with OAL on October 12, 2018, file number Z-2018-1002-03.

Section 1601. Scope.

This Article applies to the following types of new appliances, if they are sold or offered for sale in California, except those sold wholesale in California for final retail sale outside the state and those designed and sold exclusively for use in recreational vehicles, or other mobile equipment. Unless otherwise specified, each provision applies only to units manufactured on or after the effective date of the provision.

NOTE: For the applicability of these regulations to appliances installed in new building construction, see sections 110.0 and 110.1 of part 6 of Title 24 of the California Code of Regulations.

...[skipping (a) through (r)]

(s) Electric motors and compressors, which are:

(1) electric motors, excluding definite purpose motors, special purpose motors, and motors exempted by the U.S. Department of Energy under 42 U.S.C. section 6313(b); or

(2) state-regulated compressors, as defined in Section 1602 of this Article, ~~which are federally regulated commercial and industrial air compressors.~~

...[skipping (t) through end of Section 1601]

Note Authority cited: Sections 25213, 25218(e), 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), 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).

Section 1602. Definitions.

(a) General

...[skipping “In this Article...” through “Color rendering index (CRI)”]

“Commercial and industrial equipment” means an article of equipment, regardless of whether it is in fact distributed in commerce for industrial or commercial use, of a type which:

(1) In operation consumes, or is designed to consume energy;

(2) To any significant extent, is distributed in commerce for industrial or commercial use; and

(3) Is not a consumer product, as defined in section 1602(a).

...[skipping “Compact Fluorescent lamp (CFL)” through (r)]

(s) Electric Motors and Compressors.

...[skipping “Accreditation” through “Air compressor”]

“Air-cooled compressor” means a compressor that utilizes air to cool both the compressed air and, if present, any auxiliary substance used to facilitate compression, and that is not a liquid-cooled compressor.

...[skipping “Air-over electric motor” through “Alternative efficiency determination method”]

“Alternative efficiency determination method” or AEDM, means, with respect to a state-regulated compressor, a method of calculating the package isentropic efficiency, package specific power, pressure ratio at full-load operating pressure, full-load actual volume flow rate, or full-load operating pressure.

“Ancillary equipment” means any equipment distributed in commerce sold or offered for sale in California with an air compressor but that is not a bare compressor, driver, or mechanical equipment. Ancillary equipment is considered to be part of a given air compressor, regardless of whether the ancillary equipment is physically attached to the bare compressor, driver, or mechanical equipment at the time when the air compressor is distributed in commerce sold or offered for sale in California.

...[skipping “Auxiliary substance” through “Bare compressor”]

~~“Basic model” of a federally regulated compressor means all units of a class of compressors manufactured by one manufacturer, having the same primary energy source, the same compressor motor nominal horsepower, and essentially identical electrical, physical, and functional (or pneumatic) characteristics that affect energy consumption and energy efficiency.~~

...[skipping “Basic model” of a federally regulated electric motor” through “Basic model” of a federally regulated small electric motor”]

“Basic model” of a state-regulated compressor means all units of a class of compressors manufactured by one manufacturer, having the same primary energy source, the same compressor motor nominal horsepower, and essentially identical electrical, physical, and functional (or pneumatic) characteristics that affect energy consumption and energy efficiency.

“Brushless electric motor” means a machine that converts electrical power into rotational mechanical power without use of sliding electrical contacts.

...[skipping “Certification program” through “Compressor” means a machine]

“Compressor motor nominal horsepower” means the motor horsepower of the electric motor, as determined in accordance with the applicable procedures in 10 C.F.R. part 431 subparts B and X, with which the rated air compressor is ~~distributed in commerce~~ sold or offered for sale in California.

...[skipping “Definite purpose electric motor” through “Fire pump electric motor”]

“Fixed-speed compressor” means an air compressor that is not capable of adjusting the speed of the driver continuously over the driver operating speed range in response to incremental changes in the required compressor flow rate.

...[skipping “Full-load actual volume flow rate” through “IEC Design N motor”]

“Liquid-cooled compressor” means a compressor that utilizes liquid coolant provided by an external system to cool both the compressed air and, if present, any auxiliary substance used to facilitate compression.

“Liquid-ring compressor” means a compressor that has an impeller with blades that are located in a cylindrical housing and arranged eccentrically relative to the housing, where the liquid acts as a liquid ring arranged concentrically to the housing and eccentrically to the impeller, forming the compression chamber.

“Lubricated compressor” means a compressor that introduces an auxiliary substance into the compression chamber during compression.

“Maximum full-flow operating pressure” means the maximum discharge pressure at which the compressor is capable of operating, as determined in accordance with the test procedure prescribed in section 1604(s) of this Article.

...[skipping “Mechanical equipment” through “Package isentropic efficiency”]

“Package specific power” means the compressor power input at a given load point, divided by the actual volume flow rate at the same load point, as determined in accordance with the test procedure prescribed in section 1604(s) of this Article.

“Positive displacement compressor” means a compressor in which the admission and diminution of successive volumes of the gaseous medium are performed periodically by forced expansion and diminution of a closed space(s) in a working chamber(s) by means of displacement of a moving member(s) or by displacement and forced discharge of the gaseous medium into the high -pressure area.

“Pressure ratio at full-load operating pressure” means the ratio of discharge pressure to inlet pressure, determined at full-load operating pressure in accordance with the test procedures prescribed in ~~10 C.F.R. section 431.344~~ section 1604(s) of this Article.

“Reciprocating compressor” means a positive displacement compressor in which gas admission and diminution of its successive volumes or its forced discharge are performed cyclically by straight -line alternating movements of a moving member(s) in a compression chamber(s).

...[skipping “Rotor”]

“Rotary compressor” means a positive displacement compressor in which gas admission and diminution of its successive volumes or its forced discharge are performed cyclically by rotation of one or several rotors in a compressor casing.

...[skipping “Small electric motor” through “Special purpose motor”]

“State-regulated compressor” means commercial and industrial equipment that meets all of the following criteria:

- (1) is an air compressor,
- (2) is a rotary compressor,
- (3) is not a liquid-ring compressor,
- (4) is driven by a brushless electric motor,
- (5) is a lubricated compressor.

- (6) has a full-load operating pressure greater than or equal to 75 pounds per square inch gauge (psig) and less than or equal to 200 psig.
- (7) is not designed and tested to the requirements of The American Petroleum Institute standard 619, “Rotary-Type Positive-Displacement Compressors for Petroleum, Petrochemical, and Natural Gas Industries.”
- (8) has full-load actual volume flow rate greater than or equal to 35 cubic feet per minute (cfm), or is sold or offered for sale with a compressor motor nominal horsepower greater than or equal to 10 horsepower (hp).
- (9) has a full-load actual volume flow rate less than or equal to 1,250 cfm, or is sold or offered for sale with a compressor motor nominal horsepower less than or equal to 200 hp.
- (10) is driven by a three-phase electric motor.
- (11) is manufactured alone or as a component of another piece of equipment; and
- (12) is one of the equipment classes listed in Table S-5.

...[skipping “Total power loss” through end of section 1602]

Note: Authority cited: Sections 25213, 25218(e), 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), 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).

Section 1602.1 Rules of Construction - No change

Section 1603. Testing: All Appliances - No change

Section 1604. Test Methods for Specific Appliances.

...[skipping (a) through (r)]

(s) Electric Motors and Compressors.

...[skipping (1) and (2)]

(3) Compressors. The test method for state-regulated compressors is 10 C.F.R. section 431.344 (Appendix A to Subpart T of 10 C.F.R., § 431), including but not limited to provisions on alternative efficiency determination method (AEDM) and additional testing requirements concerning selection of models to be tested if an AEDM is to be applied, in 10 C.F.R. section 429.63 and 10 C.F.R. section 429.70.

...[skipping (t) through (w)]

The following documents are incorporated by reference in section 1604.

...[skipping California Energy Commission Test Methods]

FEDERAL TEST METHODS

C.F.R., Title 10, section 429.56, 429.63, and 429.70

C.F.R., Title 10, section 430.23, and 10 C.F.R. Appendixes A, B, C1, D1, D2, E, F, H, I, J1, J2, M, N, O, P, Q, R, S, T, U, V, W, X, S1, Y, Z, AA, BB, and CC of subpart B of part 430

C.F.R., Title 10, sections 431.15, 431.16, 431.17, 431.18, 431.19, 431.20, and 431.21

C.F.R., Title 10, sections 431.63 and 431.64

C.F.R., Title 10, sections 431.75 and 431.76

C.F.R., Title 10, sections 431.85 and 431.86

C.F.R., Title 10, sections 431.95 and 431.96

C.F.R., Title 10, sections 431.105 and 431.106

C.F.R., Title 10, sections 431.133 and 431.134

C.F.R., Title 10, section 431.193

C.F.R., Title 10, section 431.204(b)

C.F.R., Title 10, section 431.224

C.F.R., Title 10, sections 431.263 and 431.264

C.F.R., Title 10, sections 431.293 and 431.294

C.F.R., Title 10, sections 431.303 and 431.304

C.F.R., Title 10, sections 431.344, Appendix A to Subpart T of 10 C.F.R., § 431

C.F.R., Title 10, sections 431.443, 431.444, and 431.445

C.F.R., Title 10, section 431.464

C.F.R., Title 10, section 431 subpart G

Copies available from:

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U.S. Government Printing Office
Washington, DC 20402
www.ecfr.gov

...[skipping United States Environmental Protection Agency (EPA) through end of section 1604]

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

Section 1605. Energy Performance, Energy Design, Water Performance, and Water Design Standards: In General - No change

Section 1605.1. Federal and State Standards for Federally Regulated Appliances.

...[skipping (a) through (r)]

(s) Electric Motors and Compressors.

...[skipping (1) through (6)]

~~(7) Compressors. There are no standards for federally regulated compressors. See section 1605.3(s) of this Article for energy efficiency standards for state-regulated compressors.~~

...[skipping (t) through end of section 1605.1]

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

Section 1605.2 State Standards for Federally Regulated Appliances.

...[skipping (a) through (r)]

(s) Electric Motors and Compressors.

...[skipping (1)]

~~(2) Compressors. There are no energy efficiency standards for federally regulated compressors. See section 1605.3(s) of this Article for energy efficiency standards for state-regulated compressors.~~

...[skipping (t) through end of section 1605.2]

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

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

...[skipping (a) through (r)]

(s) Electric Motors and Compressors.

...[skipping (1)]

(2) **Compressors.** ~~There are no energy efficiency standards for federally regulated compressors. State-regulated compressors manufactured on or after January 1, 2022, shall meet the applicable performance values in Table S-5.~~

**Table S-5
Standards for State-regulated Compressors**

<u>Equipment Class</u>	<u>Minimum Package Isentropic Efficiency[†]</u>	<u>η_{Regr} (package isentropic efficiency reference curve)</u>	<u>d (Percentage Loss Reduction)</u>
<u>Rotary, lubricated, air-cooled, fixed-speed compressor</u>	$\eta_{Regr} + (1 - \eta_{Regr}) * \left(\frac{d}{100}\right)$	$-0.00928 * \ln^2(.4719 * V_1) + 0.13911 * \ln(.4719 * V_1) + 0.27110$	<u>-15</u>
<u>Rotary, lubricated, air-cooled, variable-speed compressor</u>	$\eta_{Regr} + (1 - \eta_{Regr}) * \left(\frac{d}{100}\right)$	$-0.01549 * \ln^2(.4719 * V_1) + 0.21573 * \ln(.4719 * V_1) + 0.00905$	<u>-10</u>
<u>Rotary, lubricated, liquid-cooled, fixed-speed compressor</u>	$\frac{.02349 + \eta_{Regr} + (1 - \eta_{Regr}) * \left(\frac{d}{100}\right)}{\left(\frac{d}{100}\right)}$	$\frac{-0.00928 * \ln^2(.4719 * V_1) + 0.13911 * \ln(.4719 * V_1) + 0.27110}{\left(\frac{d}{100}\right)}$	<u>-15</u>
<u>Rotary, lubricated, liquid-cooled, variable-speed compressor</u>	$\frac{.02349 + \eta_{Regr} + (1 - \eta_{Regr}) * \left(\frac{d}{100}\right)}{\left(\frac{d}{100}\right)}$	$\frac{-0.01549 * \ln^2(.4719 * V_1) + 0.21573 * \ln(.4719 * V_1) + 0.00905}{\left(\frac{d}{100}\right)}$	<u>-15</u>

Where V_1 is the full-load actual volume flow rate of the compressor, in cubic feet per minute, as determined in accordance with the test procedure in section 1604(s).

[†] For “fixed-speed compressor” equipment classes, the relevant Package Isentropic Efficiency is Full-load Package Isentropic Efficiency. For “Variable-speed compressor” equipment classes, the relevant Package Isentropic Efficiency is Part-load Package Isentropic Efficiency. Both Full- and Part-Load Package Isentropic Efficiency are determined in accordance with the test procedure in section 1604(s) of this Article.

...[skipping (t) through end of section 1605.3]

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

Section 1606. Filing by Manufacturers; Listing of Appliances in the MAEDbS.

(a) Filing of Statements.

Each manufacturer shall electronically file with the Executive Director through the MAEDbS a statement for each appliance that is sold or offered for sale in California. The statement shall contain all of the information described in paragraphs (2) through (4) of this subsection and shall meet all of the requirements of paragraph (1) of this subsection and all other applicable requirements in this Article.

The effective dates of this section shall be the same as the effective dates shown in section 1605.1, 1605.2 or 1605.3 of this Article for appliances for which there is an energy efficiency, energy consumption, energy design, water efficiency, water consumption, or water design standard in section 1605.1, 1605.2, or 1605.3 of this Article. For appliances with no energy efficiency, energy consumption, energy design, water efficiency, water consumption, or water design standard in section 1605.1, 1605.2, or 1605.3 of this Article, the effective date of this section shall be one year after they are added to section 1601 of this Article, unless a different effective date is specified.

Exceptions to Section 1606(a) of this Article: Section 1606(a) of this Article is not applicable to:

1. external power supplies,
- ~~2. compressors,~~
- ~~3. portable air conditioners (except for spot air conditioners),~~
- ~~24. small electric motors, or~~
- ~~35. à la carte chargers meeting the EXCEPTION noted in section 1605.3(w)(2) of this Article.~~

...[skipping (a)(1) through (a)(2)]

(3) Testing and Performance Information.

(A) A statement that the appliance has been tested in accordance with all applicable requirements of sections 1603 and 1604 of this Article. If section 1604 of this Article provides more than one test method that may be used, the manufacturer shall identify which method was used.

Exception 1. to Section 1606(a)(3)(A) of this Article:

For state-regulated compressors, the manufacturer shall submit a statement that the appliance has been tested in accordance with all applicable requirements of sections 1603 and 1604 of this Article, or that the appliance has been rated according to an alternative efficiency determination method (AEDM) in accordance with all applicable requirements of section 1604(s) of this Article.

(B) The name and address and, if available, telephone number, fax number, URL (web site) address, and e-mail address of the laboratory or other institution where the testing required by sections 1603 and 1604 of this Article was performed.

(C) The applicable information listed in Table X; provided, however, that submittal of information marked with "i" is voluntary for federally regulated appliances, and that

submittal of information marked with "2" is voluntary for state-regulated appliances. Where there is text in the "Permissible Answers" column, the information provided must be one of the answers shown. If the text in the "Permissible Answers" column states "other (specify)," the information provided must be a specific response for the "Required Information" category (e.g., a response of "other" is not acceptable).

Exception 1. to Section 1606(a)(3)(C) of this Article:

If an appliance has an alternative test procedure pursuant to section 1603(c)(1) of this Article, or an alternative assessment method specified pursuant to section 1603(c)(2)(A) of this Article, then the statement shall include:

- (1) the following information from Table X: Manufacturer's Name, Brand Name, Model Number, and Regulatory Status; and
- (2) all information from Table X that is applicable to the appliance and that is produced during the alternative test procedure or the alternative assessment method; and
- (3) all other energy performance information produced during the alternative test procedure or the alternative assessment method.

Exception 2. to Section 1606(a)(3)(C) of this Article:

If the Executive Director has specified that there is no test method for an appliance pursuant to section 1603(c)(2)(B) of this Article, then the statement shall include the following information from Table X: Manufacturer's Name, Brand Name, Model Number, and Regulatory Status.

EXCEPTION 3. to Section 1606(a)(3)(C) of this Article:

Manufacturers of state-regulated LED lamps and LED versions of state-regulated small-diameter directional lamps may certify estimated values for rated lifetime until testing per section 1604 is complete. When reporting estimated values, the certification report shall describe the prediction method, which must be generally representative of the methods specified in 10 C.F.R. Appendix BB to subpart B of part 430, "Uniform Test Method for Measuring the Input Power, Lumen Output, Lamp Efficacy, Correlated Color Temperature (CCT), Color Rendering Index (CRI), Power Factor, Time to Failure, and Standby Mode Power of Integrated Light-Emitting Diode (LED) Lamps." Manufacturers shall maintain records of the development of all estimated values and any associated initial test data. Manufacturers shall update the certification in the MAEDbS upon completion of the required test procedures for rated lifetime.

(D) How Tested Data Must Be Reported.

1. For any numerical value required by Table X that is produced by a test specified in section 1604 of this Article, the reported value shall be no higher for the value for which the consumer would prefer a high number, and no lower for the value for which the consumer would prefer a low number, than the values obtained by testing; unless

different specific instructions are specified in the test method specified in section 1604 of this Article.

2. For any numerical value required by Table X that is produced by calculation from measured numerical test results, the reported value shall be no higher for the values where the consumer would prefer a high number than the exact result of the calculation, and no lower than the exact result of the calculation where the consumer would prefer a low number, than the values obtained by calculating, unless different specific instructions are specified in the test method specified in section 1604 of this Article.
3. Manufacturers may report:
 - a. numbers higher than tested values, where the consumer would, all other things being equal, prefer lower values (or is indifferent); and
 - b. numbers lower than tested values, where the consumer would, all other things being equal, prefer higher values (or is indifferent).

Example: An air conditioner is tested using the appropriate test method specified in section 1604 of this Article, and the test method does not include specific instructions about the precision of reporting.

- Cooling capacity is measured as: 36,014 Btu per hour.
- For cooling capacity, consumers prefer higher values.
- The manufacturer may not report any value over 36,014 Btu per hour.
- The manufacturer chooses to report 36,000 Btu per hour.
- Electrical energy use is measured at 3,487 watts.
- For electrical energy use, consumers prefer lower values.
- The manufacturer may not report any value under 3,487 watts.
- The manufacturer chooses to report 3,500 watts.
- Using the data the manufacturer chooses to report, $EER = 36,000/3,500 = 10.285714$.
- For EER, consumers prefer higher values.
- The manufacturer may not report any value of EER over 10.285714 (if EER is reported with only one decimal place, the maximum value would be 10.2).
- The manufacturer chooses to report $EER = 10.2$ Btu per watt hour.
- If the manufacturer had chosen to report the cooling capacity as 36,014 Btu per hour, and the electrical energy use as 3,487 watts, the calculated EER would have been $36,014/3,487 = 10.328076$. In this case the manufacturer could not report any value of EER over 10.328076 (if EER is reported with only one decimal place, the maximum value would be 10.3).

Table X

Data Submittal Requirements

	<i>Appliance</i>	<i>Required Information</i>	<i>Permissible Answers</i>
	All Appliances	* Manufacturer's Name	
		* Brand Name	
		* Model Number	
		Date model to be displayed	
		Regulatory Status	Federally regulated consumer product, federally regulated commercial and industrial equipment, non-federally regulated

...[skipping A through S-Electric Motors]

	<i>Appliance</i>	<i>Required Information</i>	<i>Permissible Answers</i>
S	<u>State-regulated Compressors</u>	<u>I</u> sentropic Efficiency	
		<u>E</u> quipment Class	<u>R</u> otary, lubricated, air-cooled, fixed-speed compressor; <u>R</u> otary, lubricated, air-cooled, variable-speed compressor; <u>R</u> otary lubricated, liquid-cooled, fixed-speed compressor; <u>R</u> otary, lubricated, liquid-cooled, variable-speed compressor
		<u>F</u> ull-load package isentropic efficiency (fixed-speed compressor only) or part-load	

	<u>package isentropic efficiency (variable-speed compressor only)</u>	
	<u>Full-load actual volume flow rate (CFM)</u>	
	<u>Compressor motor nominal horsepower (HP)</u>	
	<u>Full-load operating pressure (psig)</u>	
	<u>Maximum full-flow operating pressure (psig)</u>	
	<u>Pressure ratio at full-load operating pressure</u>	

...[skipping T through end of Table X]

(4) Declaration.

(A) Each statement shall include a declaration, executed under penalty of perjury of the laws of California, that

1. all the information provided in the statement is true, complete, accurate, and in compliance with all applicable provisions of this Article;
2. the requirements of section 1606(g) of this Article have been and are being complied with;
3. for appliances for which there is an energy efficiency, energy consumption, energy design, water efficiency, water consumption, or water design standard in section 1605.1, 1605.2, or 1605.3 of this Article, that the appliance complies with the applicable standards;
4. the appliance was tested under the applicable test method specified in section 1604 of this Article, and, for the following appliances, was tested as follows:
 - a. for other self-contained commercial refrigerators, refrigerator-freezers, and freezers with doors that are pass-through and roll-through refrigerators and freezers, that the back (loading) doors remained closed throughout the test;
 - b. for all refrigerators, refrigerator-freezers, and freezers were tested using alternating current electricity only;

- c. for all split system central air conditioners and compressor-containing units, these models were tested with the combination of compressor-containing and non-compressor containing unit specified in 10 C.F.R. section 429.16(b)(2);
- d. for all gas-fired air conditioners and gas-fired heat pumps, all appliances were tested to ANSI Z21.40.4-1996 as modified by CEC, Efficiency Calculation method for Gas-Fired Heat Pumps as a New Compliance Option (1996);
- e. for evaporative coolers, all appliances were tested to the applicable test method referenced in Table D-3 with the modifications appearing in Table D-3;
- f. for whole house fans, all appliances were tested to HVI-916, and if equipped with louvers were tested with manufacturer-provided louvers in place;
- g. for battery charger systems for which certification is based on testing of representative battery charger system models, the models tested as representative are those known or expected to have the poorest performance characteristics such that the data generated meets the requirements of section 1606(a)(3)(D) of this Article for all associated models; and
- h. for kitchen faucets that utilize an optional and temporary higher flow rate than 1.8 gpm, the higher flow rate has been tested utilizing the test procedure identified for kitchen faucets in section 1604(h) at 60 psi and verified to have a flow rate less than or equal to 2.2 gpm.
- i. for state-regulated compressors that are rated using an alternative efficiency determination method (AEDM) in lieu of testing, that the represented value of efficiency, consumption, or other non-energy metrics for the basic model was determined through the alternative efficiency determination method specified in section 1604(s).

...[skipping remainder of section 1606]

Note: Authority cited: Sections 25213, 25218(e), 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), 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).

Section 1607. Marking of Appliances. No change

Section 1608. Compliance, Enforcement, and General Administrative Matters.

(a) General Requirements for the Sale or Installation of All Appliances.

Any unit of any appliance within the scope of section 1601 of this Article may be sold or offered for sale in California only if:

- (1) the appliance appears in the most recent MAEDbS established pursuant to section 1606(c) of this Article, unless the only reason for the appliance's absence from the MAEDbS is its failure to comply with an applicable standard in section 1605.1 of this Article;
- (2) the manufacturer has:
 - (A) tested the appliance as required by sections 1603 and 1604 of this Article;
 - (B) marked the unit as required by section 1607 of this Article;
 - (C) for any appliance for which there is an applicable standard in section 1605.2 or 1605.3 of this Article, certified under section 1606(a) of this Article that the appliance complies with the standard;
- (3) the unit has the same components, design characteristics, and all other features that affect energy or water consumption or energy or water efficiency, as applicable, as the units that were tested under sections 1603 and 1604 of this Article and for which information was submitted under section 1606(a) of this Article; and
- (4) for any appliance for which there is an applicable standard in section 1605.2 or 1605.3 of this Article, the unit complies with the standard.

Exceptions to Sections 1608(a)(1) and 1608(a)(2)(C) of this Article. Sections 1608(a)(1) and 1608(a)(2)(C) of this Article are not applicable to:

1. external power supplies,
- ~~2. compressors,~~
- ~~3. portable air conditioners (except for spot air conditioners),~~
- ~~4. small electric motors, or~~
5. à la carte chargers meeting the EXCEPTION noted in section 1605.3(w)(2) of this Article.

...[skipping (b) through end of section 1608]

Note: Authority cited: Sections 25213, 25218(e), 25402(a)-(c), and 25960, Public Resources Code.

Reference: Sections 25216.5(d), 25402(a)-(c), and 25960, Public Resources Code.

Section 1609. Administrative Civil Penalties - No change

STATE OF CALIFORNIA
STATE ENERGY RESOURCES
CONSERVATION AND DEVELOPMENT COMMISSION

In the Matter of:

**Commercial and Industrial Air Compressors
Appliance Efficiency Rulemaking**

Docket No. 18-AAER-05

**RESOLUTION ADOPTING NEGATIVE
DECLARATION AND UPDATES TO THE
APPLIANCE EFFICIENCY REGULATIONS
Order Number 19-0109-4**

WHEREAS, on November 16, 2018, the Commission published a Notice of Proposed Action (NOPA) concerning the adoption of appliance efficiency standards for Commercial and Industrial Air Compressors, and the Express Terms of the proposed regulations, and the Initial Statement of Reasons (ISOR) describing the rationale for the proposed regulations; and

WHEREAS, adoption of these standards would constitute a project as defined in the California Environmental Quality Act (California Public Resources Code section 21000 et seq.) and the Guidelines for the Implementation of CEQA (California Code of Regulations, title 14, section 15000 et seq.) (collectively, "CEQA"), for which the Commission is the lead agency for the preparation and consideration of environmental documents; and

WHEREAS, on November 28, 2018, the Commission published an Initial Study and Proposed Negative Declaration for the proposed regulations, and a Notice of Availability, concluding that the proposed regulations would result in energy savings and reductions in statewide greenhouse gas emissions, and there would be no significant adverse impacts to the environment as a result; and

WHEREAS, on November 28, 2018, the Commission published a Notice of Completion and Environmental Document Transmittal, indicating that the Initial Study and Proposed Negative Declaration were submitted to the State Clearinghouse on November 28, 2018; and

WHEREAS, the public comment period on the proposed regulations ended on December 31, 2018, and the public comment period on the Initial Study and Proposed Negative Declaration ended on January 3, 2019; and

WHEREAS, each of these documents and notices was provided to every person on the Energy Commission's Appliances List Server and to every person who had requested notice of such matters, and was posted to the Commission's website, all of which remain on file and may be viewed on the Commission website or at the Commission's headquarters in Sacramento; and

WHEREAS, on January 3, 2019, Commission staff held a public hearing to receive comments on the Proposed Negative Declaration and the proposed regulations pursuant to CEQA and the Administrative Procedure Act; and

WHEREAS, no written or oral comments were received on the Initial Study or proposed negative declaration; and

WHEREAS, the Commission received and considered written and oral comments on the proposed regulations; and

WHEREAS, the Commission has reviewed and considered the Initial Study and Negative Declaration, and other related documents in the record before it;

THEREFORE, THE CALIFORNIA ENERGY COMMISSION FINDS:

With respect to CEQA compliance:

1. The foregoing recitals are true and correct.
2. The Commission has independently reviewed, analyzed, and considered the Initial Study, Proposed Negative Declaration and the whole record before it. Based on this evidence, the Commission finds that there is no substantial evidence supporting a fair argument that the adoption of standards for commercial and industrial air compressors will have a significant adverse effect on the environment.
3. The Negative Declaration has been completed in compliance with CEQA.
4. The Negative Declaration represents the independent judgment and analysis of the Commission as lead agency for the project within the meaning of CEQA.
5. The Commission's Dockets Unit is the custodian of records of the proceeding on which this decision is based. The record of this proceeding may be obtained online and is available at the Commission's headquarters in Sacramento.
6. The Commission hereby directs staff to appropriately file a notice of determination within five working days of the adoption of this resolution.

With respect to the Warren-Alquist Act:

7. The proposed regulations will reduce the wasteful, uneconomic, inefficient, and unnecessary consumption of energy for appliances that require a significant amount of energy on a statewide basis; and
8. The proposed regulations are technologically feasible and attainable, as supported by the presence of products currently in the market that meet the proposed standards; and

9. The proposed regulations do not result in any added total costs to the consumer over the designed life of the appliances concerned, as supported by staff's calculation of a net benefit to cost ratio between 2:1 and 6:1 depending on the compressor type; and

With respect to the Administrative Procedure Act:

10. The proposed regulations will not create new businesses, eliminate existing businesses, or have an effect on the expansion of businesses in California and will not result in a significant statewide adverse impact directly affecting business, including the ability of California businesses to compete with businesses in other states; and
11. The proposed regulations will not create or eliminate a significant number of jobs within California; and
12. The proposed regulations will impose no direct costs, or direct or indirect requirements or mandates, on state agencies, local agencies, or school districts, including but not limited to costs that are required to be reimbursed under Part 7 (commencing with Section 17500) of Division 4 of the Government Code; and
13. The proposed regulations will result in no costs or savings in federal funding to the State of California; and
14. The proposed regulations will not result in costs or savings to any state agency in reasonable compliance with these regulations; and
15. The proposed regulations will result in no nondiscretionary costs or savings to local agencies or school districts; and
16. The proposed regulations will have no impact on housing costs; and
17. The proposed regulations will have no significant, statewide adverse effect on businesses in general or small businesses in particular; and
18. The proposed regulations will impose no net costs on private persons when savings from reduced electricity use are taken into account; and
19. The proposed regulations may result in costs that a representative business may necessarily incur in reasonable compliance with the regulations, but any costs would be passed on to consumers and outweighed by savings resulting from reduced electricity use; and
20. The proposed regulations will result in non-economic benefits, on a statewide level, such as reduction in pollution, greenhouse gas emissions, and energy generation demand; and
21. The proposed regulations have no alternatives that would be more effective in carrying out the purposes of the Warren-Alquist Act, that would be as effective and less burdensome to

affected private persons in carrying out those purposes, or that would be more cost effective to affected private persons and equally effective in implementing those purposes; and

22. The proposed regulations require completion of certain reports regarding the efficiency and performance of the regulated appliances; this information is necessary for the public and the Energy Commission to confirm that the standards are met and that the appliances consume no more energy than allowed, so that the anticipated energy, environmental and cost benefits will actually be achieved. Accordingly, it is necessary that these reporting requirements apply to businesses in order to protect the health, safety and welfare of the people of California, as required by Government Code section 11346.3, subdivision (d); and
23. After considering all comments, objections, and recommendations received during the comment period regarding the proposed regulation, the Commission has determined that no amendments will be made and, as such, no additional comment period is required.

THEREFORE BE IT RESOLVED, after considering all comments received and the staff's responses, and based on the entire record of the proceeding, the California Energy Commission hereby adopts the Negative Declaration; and

BE IT FURTHER RESOLVED, after considering all comments received and the staff's responses, and based on the entire record of the proceeding, the California Energy Commission hereby adopts the amendments to its appliance efficiency regulations, as set forth in the express terms. (California Code of Regulations, sections 1601-1609.) We take this action under the authority of, and to implement, interpret, and make specific, sections 25213, 25218(e), and 25402 of the Public Resources Code; and

BE IT FURTHER RESOLVED, the Energy Commission delegates the authority and directs Commission staff to take, on behalf of the Commission, all actions reasonably necessary to have the adopted regulations go into effect, including but not limited to making any appropriate non-substantive changes to the regulations; preparing all appropriate documents, such as the Final Statement of Reasons; compiling and submitting the rulemaking file to the Office of Administrative Law (OAL); and making any changes to the rulemaking file required by OAL.

CERTIFICATION

The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of a Resolution duly and regularly adopted at a meeting of the California Energy Commission held on January 9, 2019.

AYE: xxx
NAY: xxx
ABSENT: xxx
ABSTAIN: xxx

Original Signed by:

Cody Goldthrite
Secretariat