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CALIFORNIA ENERGY COMMISSION

715 P Street
Sacramento, California 95814

energy.ca.gov

CEC-057 (Revised 1/21)

**INITIAL STATEMENT OF REASONS****2021 Appliance Efficiency Rulemaking for Air Filters**

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INTRODUCTION

The California Energy Commission (CEC) proposes to adopt changes to the air filters regulations contained in the California Code of Regulations (CCR), Title 20 (“Proposed Action”), after considering all comments, objections, and recommendations regarding the Proposed Action.

PROBLEM STATEMENT

The Warren-Alquist Act establishes the CEC as California’s primary energy policy and planning agency. Sections 25213, 25218(e), and 25402(c) of the Public Resources Code mandate and/or authorize that the CEC adopt rules and regulations, as necessary, to reduce the inefficient consumption of energy and water by prescribing efficiency standards and other cost-effective measures, including energy consumption marking, for appliances whose use requires a significant amount of energy or water statewide.

One of the ways the CEC satisfies this requirement is through the Appliance Efficiency Regulations (California Code of Regulations, Title 20, Sections 1601-1609), which contain definitions, test procedures, efficiency standards, and marking and certification requirements for state and federally regulated appliances. Further, the regulations require that appliance manufacturers certify to the CEC that their products meet all applicable state and federal appliance efficiency regulations before their products can be included in the CEC database of appliances approved to be sold or offered for sale within California.

In 2016, the CEC learned that manufacturers of air filters were concerned about certain testing requirements regarding what size filters must be used in the relevant test procedures. The regulations, which required manufacturers to test “large,” “medium,” and “small” air filters, were meant to provide manufacturers flexibility when conducting required tests. However, manufacturers expressed concerns that they lacked adequate guidance on how to identify and select which air filters sizes were required to be tested. Further, manufacturers expressed concerns that it was unclear how to apply the test

results from the small, medium, and large air filters to the rest of the manufacturers' air filters in the same product family. Manufacturers voiced their concern that the lack of an industry standard or accurate method to scale test results to different filter sizes made it impossible for manufacturers to consistently comply with the testing, marking, and certification requirements for air filters. These concerns were not raised during the original rulemaking; rather, they only-became evident after the regulations were adopted.

On August 9, 2017, in response to these concerns, the CEC adopted emergency regulations to change the effective date by which air filters sold or offered for sale in California must comply with testing, marking, and certification requirements. These emergency regulations changed the effective date for these requirements from July 1, 2016, to the new effective date of April 1, 2019. This new effective date provided the CEC some additional time to collaborate with stakeholders to study, address, and resolve manufacturers' concerns with the existing testing requirements, while allowing manufacturers to continue to supply air filters to the California market. The rulemaking clarifying the test, certification, and marking requirements was not completed within the allotted time frame of one-year, and as a result, the standard reverted back to the original regulation. Ultimately, CEC staff concluded the regulations should be amended to be more specific with respect to different air filter sizes needed for testing and certification.

In this rulemaking, the CEC proposes to update the testing, certification, and marking requirements for air filters, addressing the concerns discussed above. The CEC proposes modifying the existing scope for air filters to clarify that only air filters for ducted systems are covered by the regulation. The CEC also proposes to update the test procedures to the most recent iterations of the American National Standards Institute/American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-2017 and the Air-Conditioning, Heating, and Refrigeration Institute Standard 680 (I-P)-2017 test methods. The proposed regulations would allow the size of the filter used for testing to be chosen by the manufacturer as the basic model for the filter family. The certification and marking requirements have been updated to specify requirements based on the test procedure used for testing.

PURPOSE

The purpose of the regulations is to carry out the CECs statutory mandate to save energy and to update the testing, certification, and marking requirements for air filters.

BENEFITS

The specific benefits of the proposed regulations are modifications to the existing standards that will allow manufacturers to certify all sizes of air filters to the CEC. The modification will also enable consumers to purchase the correct air filter that is compatible with ducted forced-air heating or cooling systems. Although this regulation is not one which introduces an efficiency standard, it provides the necessary information, through database certification and marking, for consumers to acquire an efficient air filter for heating, ventilation, and air conditioning (HVAC) systems. Since the air filter

accounts for one percent of the total efficiency of an HVAC system, CEC staff calculate a total energy savings of approximately 30 GWh/year of electricity and 5.5 million therms of natural gas.

The proposed standards will lead to improved air quality in California. Reduced energy consumption translates to fewer power plants built and less pressure on the limited energy resources, land, and water use associated with energy production. In addition, lower electricity consumption results in reduced greenhouse gas and criteria pollutant emissions, primarily from reduced generation in fossil fuel power plants, such as natural gas power plants.

STATEMENT OF SPECIFIC PURPOSE AND NECESSITY

SECTION 1601. SCOPE

The specific purpose is to modify the existing scope for air filters to clarify that only air filters for ducted systems are covered by the regulations to align the scope with the Energy Code. The scope has been amended to clarify that only air filters for ducted systems are covered by the regulation. This change is necessary because the scope of the air filter requirements in the Energy Code is limited to ducted systems, but the scope of the requirement in the current Appliance Efficiency Regulations is not limited to ducted systems. Because the requirements are meant to be complementary, the CEC proposes the scope in the Appliance Efficiency Regulation to align with the one in the Energy Code.

SECTION 1602. DEFINITIONS

The specific purpose is to add a new definition for “Basic Model” and to update existing definitions. The CEC also proposes to incorporate by reference the Minimum Efficiency Reporting Value (MERV) of air filters.

As discussed more fully below, the updated definitions are necessary to ensure that the terms used within the regulations will have clear and unambiguous meaning to readers, including the public, and particularly to the persons and organizations affected by these regulations.

The proposed update to the definition for air filter is required because it specifies the type of air filter that will be covered under the proposed regulations. Additionally, the definition is required to align with the definition in the Energy Code.

The CEC is proposing to add a definition for the basic model of an air filter to clearly communicate to manufacturers impacted by the proposed regulation what will be considered as the basic model. The basic model for air filters definition was developed because it clearly states the parameters of the basic model for each type of filter that have the same depth and same construction irrespective of the face area. By having a

clear definition of the basic unit, the results of the tested unit will allow manufacturers to certify, by following instructions in the test procedure, different face area size filters of the same type. The clearly defined basic model will also allow for easy enforcement of the regulatory requirement.

The CEC is also updating the definition for the minimum efficiency reporting value (MERV) to provide that the reporting value may meet the metric defined in the American National Standards Institute (ANSI)/ American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 52.2-2017 test procedure. It is necessary to update the reference to ANSI/ASHRAE 52.2-2017 test procedure to ensure that the correct test procedure is used for certification.

The definition for “Particle size efficiency” has been amended to delete “labels” and add in its place “marking” for clarity and to be in line with Section 1607.

The definition for “Pressure drop” has been amended to delete “equipment” and add in its place “system” for clarity. Since the pressure drops occurs within a system due to the filter and the media trapped in it, the CEC believes the use of “system” is a better descriptor.

SECTION 1604. TEST METHODS

The specific purpose is to update and incorporate by reference the test procedures to the most recent iterations of the American National Standards Institute/American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-2017 and the Air-Conditioning, Heating, and Refrigeration Institute Standard 680 (I-P)-2017 test methods.

The CEC is proposing to update and incorporate by reference the test procedures to the most recent iterations of the American National Standards Institute/American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-2017 and the Air-Conditioning, Heating, and Refrigeration Institute Standard 680 (I-P)-2017 test methods for consistency with industry practices and the Energy Code. The necessity is to clearly specify what test procedure is applicable to the proposed regulation. It also clearly communicates that the proposed test procedures will be the ones used to verify results used for certification for enforcement purposes.

The additional testing requirements listed under 1604(c)(3)(B) are necessary to calculate a specific value using the least squares method required for certification into the Modernized Appliance Efficiency Database System (MAEDbS). These additional requirements were introduced due to comments received during the public comment period and were deemed necessary for support of the regulatory process and the building energy efficiency standards under title 24.

SECTION 1606. FILING BY MANUFACTURERS; LISTING OF APPLIANCES IN THE MAEDbS.

The specific purpose is to add manufacturers reporting requirements for air filters to Table X. State law (Public Resources Code § 25402(c)(1)) requires manufacturers to report to the CEC that their appliances comply with the applicable energy efficiency standards before they are sold or offered for sale in the state. The appliance efficiency regulations require manufacturers to provide specified information to the CEC Modernized Appliance Efficiency Database System (MAEDbS) in order to confirm compliance with the applicable standards and requirements and collect information to aid in future adjustments or additions to the standards. MAEDbS is used by manufacturers and maintained by CEC to list the appliances authorized to be sold or offered for sale in California. This helps the CEC and consumers verify compliance with applicable federal and state efficiency standards and other requirements.

The Appliance Efficiency Regulations require air filter certification to the CEC for tested products. The values queried in the proposed Table X, are necessary for the listing of the air filter into our database. Although MERV values range between 1 and 20, the reporting values for the proposed regulation range between 1 and 16 because the MERV values above 16 are for filters usually found in hospitals, cleanrooms, and nuclear power plants and are not used in large numbers and may have additional regulatory requirements associated to safety. The values will inform manufacturers and consumers with enough data to properly care for their HVAC unit and increase its efficiency.

The values calculated using the method listed under 1604(c)(3)(B) are used and are included in the listed values needed for certification into MAEDbS.

SECTION 1607. MARKING OF APPLIANCES

The specific purpose is to update the marking requirements to specify requirements based on the test procedure used for testing. All regulated appliances are required to be marked, permanently, legibly, and conspicuously on an accessible place on each unit and in a specified font, with the manufacturer name; brand name or trademark; the model number; the date of manufacture; and the air filter performance rating depending on the test procedure by which the air filter was tested..

The marking proposed is necessary to communicate to consumers and designers' necessary information for the use and rate of change required for the air filter. The information in the marking can easily be compared to the one used for certification for enforcement purposes. It is necessary to provide the placement, type of font and other labeling requirements to ensure that the manufacturer and product efficiently communicate to the consumer on the performance of the filter.

Subsection (d)(11) is necessary since there are two different test procedures allowed for in the proposed regulations. Because two different test procedures are allowed for certification, the language used under subsection (d)(11) clearly communicates the data

that is needed in the marking and comport with the data collected from the test procedure.

Table Z-1 and Z-2 are necessary to provide a visual example of the marking being proposed under this regulation.

TECHNICAL, THEORETICAL, OR EMPIRICAL STUDIES, REPORTS, OR SIMILAR DOCUMENTS.

The CEC relied on input from various stakeholders, subject matter experts, and interested parties that provided information, feedback and subject matter expertise from operational, technical and manufacturing perspectives. Some of the groups and organizations that participated include:

American National Standards Institute (ANSI), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), and the Air-Conditioning, Heating, and Refrigeration Institute (AHRI).

The CEC relied upon the following documents:

Final Staff Report Update to Testing and Marking for Air Filters. 2021 Appliance Efficiency Rulemaking for Air Filters. Docket Number 20-AAER-02. CEC-400-2021-014

Staff Analysis of HVAC air filters, dimming fluorescent ballasts, and heat pump water chilling packages. 2015 Appliance Efficiency Pre-Rulemaking. Docket Number 15-AAER-1. February 2015. CEC-400-2015-007.

CONSIDERATION OF REASONABLE ALTERNATIVES INCLUDING THOSE THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

No reasonable alternatives to the proposed regulations have been proposed that would lessen any adverse impact on small business or that would be less burdensome and equally effective in achieving the purposes of the regulation in a manner that achieves the purposes of the statute being implemented.

The CEC is proposing regulatory amendments to address the concerns expressed by manufacturers regarding the testing, certification, and marking requirements for air filters. The proposed updates to the regulations will clarify the testing, certification, and marking requirements for air filters. The proposed regulations provide consumers with information regarding replacement air filter pressure drop performance. This information allows the consumer to better match a replacement air filter with an HVAC system specification to run the system efficiently and prevent equipment damage.

The one alternative considered by the CEC was further delay of compliance and enforcement with the existing regulations. However, this alternative would not address the concerns expressed by manufacturers regarding ambiguity of the testing, certification, and marking requirements for air filters. Therefore, staff rejected this alternative as a viable solution to remedy concerns with the existing regulations.

SPECIFIC TECHNOLOGIES OR EQUIPMENT

The proposed regulations do not mandate proprietary technology or equipment.

RESULTS OF THE ECONOMIC IMPACT ANALYSIS/ASSESSMENT

The Creation or Elimination of Jobs within the State of California

The CEC is proposing regulatory amendments to address the concerns expressed by manufacturers regarding the testing, certification, and marking requirements for air filters. The proposed updates are not expected to yield significant manufacturer cost. The proposed regulations provide consumers with information regarding replacement air filter pressure drop performance. This information allows the consumer to better match a replacement air filter with an HVAC system specification to run the system efficiently and prevent equipment damage. Statewide energy use and energy savings, and related environmental impacts and benefits, will not be affected. Therefore, the CEC has determined the proposed regulations will not create or eliminate jobs in California.

The Creation of New Businesses or the Elimination of Existing Businesses within the State of California

The CEC proposes to update the testing, certification, and marking requirements for air filters. The CEC has modified the existing scope for air filters to clarify that only air filters for ducted systems are covered by the regulation. The CEC also proposes to update the test procedures to the most recent iterations of the American National Standards Institute/American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-2017 and the Air-Conditioning, Heating, and Refrigeration Institute Standard 680 (I-P)-2017 test methods. The proposed regulations allow the size of the filter used for testing to be chosen by the manufacturer as the basic model for the filter family. The certification and marking requirements have been updated to specify requirements based on the test procedure used for testing. Therefore, the CEC has determined the proposed regulations will not create new businesses or eliminate existing businesses with the State of California.

The Expansion of Businesses Currently Doing Business within the State of California

The CEC proposes to update the testing, certification, and marking requirements for air filters. The CEC has modified the existing scope for air filters to clarify that only air filters for ducted systems are covered by the regulation. The CEC also proposes to update the test procedures to the most recent iterations of the American National Standards Institute/American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-2017 and the Air-Conditioning, Heating, and Refrigeration Institute Standard 680 (I-P)-2017 test methods. The proposed regulations allow the size of the filter used for testing to be chosen by the manufacturer as the basic model for the filter family. The certification and marking requirements have been updated to specify requirements based on the test procedure used for testing. Therefore, the CEC has determined the proposed regulations will not expand businesses currently doing business within the State of California.

Benefits of the Regulations to the Health and Welfare of California Residents, Worker Safety, and the State's Environment

The proposed modifications to the current air filter standards will lead to improved efficiency of HVAC systems for California residents, as well as energy and energy bill savings. This energy savings translates to fewer power plants built and less pressure on the limited energy resources, land, and water use associated with energy production. In addition, lower electricity consumption results in reduced greenhouse gas and criteria pollutant emissions, primarily from lower generation in hydrocarbon-burning power plants, such as natural gas power plants.

The proposed regulation will not adversely affect the health and welfare of California residents, worker safety, or the state's environment.

Results of the Economic Impact Assessment

The CEC concludes that: (1) the proposal will not create jobs within California, (2) the proposal will not eliminate jobs within California, (3) the proposal will not create new businesses in California, (4) the proposal will not eliminate existing businesses within California, and (5) the proposal will not result in the expansion of businesses currently doing business within the state.

DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

The CEC has determined that there are no existing comparable federal regulations or statutes and there are no Federal Trade Commission marking requirements for air filters.

EVIDENCE SUPPORTING FINDING OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT AFFECTING BUSINESS

The CEC has made the initial determination that the proposed regulations will not have an adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states.

The CEC proposes to update the testing, certification, and marking requirements for air filters. The CEC has modified the existing scope for air filters to clarify that only air filters for ducted systems are covered by the regulation. The CEC also proposes to update the test procedures to the most recent iterations of the American National Standards Institute/American Society of Heating, Refrigerating and Air-Conditioning Engineers Standard 52.2-2017 and the Air-Conditioning, Heating, and Refrigeration Institute Standard 680 (I-P)-2017 test methods. The proposed regulations allow the size of the filter used for testing to be chosen by the manufacturer as the basic model for the filter family. The certification and marking requirements have been updated to specify requirements based on the test procedure used for testing. The CEC has calculated a \$0.03 incremental cost per filter to businesses to implement the air filter marking requirement.

Under the Appliance Efficiency Regulations, retailers are responsible for ensuring that the regulated products they sell are certified to the CEC and appear in the MAEDbS

before they are sold or offered for sale in California. The CEC assumes that retailers will experience some minimal additional cost associated with checking MAEDbS to ensure that what they sell are certified to the CEC and appear in the MAEDbS and are therefore compliant and lawful to sell in the state.

FOR FURTHER INFORMATION

Inquiries concerning all aspects of the rulemaking process, including the substance of the proposed regulations or any other information upon which the rulemaking is based, should be directed to Corrine Fishman at corrine.fishman@energy.ca.gov.