Air Pollution Control Board

San Diego County Air Pollution Control District

AGENDA ITEM

GOVERNING BODY

GREG COX
First District

DIANNE JACOB
Second District

KRISTIN GASPAR
Third District

NATHAN FLETCHER
Fourth District

JIM DESMOND
Fifth District

DATE: **July 8, 2020**

AP01

TO: Air Pollution Control Board

SUBJECT

NOTICED PUBLIC HEARING - ADOPTION OF AMENDMENTS TO RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, STEAM GENERATORS, AND LARGE WATER HEATERS (DISTRICTS: ALL)

OVERVIEW

This is a request for the Air Pollution Control Board (Board) to adopt proposed amendments to Rule 69.2.1 (Small Boilers, Process Heaters, Steam Generators, and Large Water Heaters). The rule was initially adopted on March 25, 2009 (AP1) and regulates air pollutant emissions from new small boilers, process heaters, and steam generators (units). These units are commonly used at commercial facilities such as restaurants, laundromats, and hotels, and their resulting emissions contribute to the formation of ozone in the air we breathe. When inhaled, ozone adversely impacts people's health. Symptoms can include chest pain, shortness of breath, worsening of bronchitis and asthma, and nausea.

The San Diego region does not meet the California and National Ambient Air Quality Standards for ozone, and therefore is classified as an ozone nonattainment area. Both federal and State laws require the San Diego County Air Pollution Control District (District) to adopt and implement rules to further control and reduce ozone-forming emissions. Additionally, as technologies to control air pollutant emissions advance and lower limits on the allowable emissions become feasible, the District is required by federal and State law to update its rules accordingly, and the proposed amended rule is the result of these requirements.

Today's proposed rule amendments include lower, more health-protective, emission limits for new units. Additionally, the proposed amendments extend the rule's applicability to smaller-sized units that are currently not subject to the rule. These smaller-sized units are commonly used at facilities such as apartment buildings and dry cleaners. The proposed requirements are similar to existing requirements in other California air districts (such as the South Coast, San Joaquin, and Sacramento air districts) and compliant units are readily available.

This proposal was developed with input from the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board (CARB), and District staff conducted substantial outreach

to affected facilities including conducting a public workshop. Workshop participants requested clarifications and were not opposed to the proposed rule amendments.

Today's request is to approve a resolution adopting the amendments to Rule 69.2.1, which will become effective on July 1, 2021. The rule will then be submitted through CARB to the EPA for approval into the State Implementation Plan for attaining and maintaining the air quality standards.

RECOMMENDATION(S)
AIR POLLUTION CONTROL OFFICER

1. Find that the adoption of proposed amended Rule 69.2.1 - Small Boilers, Process Heaters, Steam Generators, and Large Water Heaters is categorically exempt from the provisions of the California Environmental Quality Act pursuant to California Code of Regulations, Title 14, Section 15308, as an action taken to assure the protection of the environment, where the regulatory process involves procedures for protection of the environment, and pursuant to California Code of Regulations, Title 14, Section 15061(b)(3), since it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment.

2. Adopt the Resolution entitled: RESOLUTION ADOPTING AMENDMENTS TO RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, STEAM GENERATORS, AND LARGE WATER HEATERS, OF REGULATION IV OF THE RULES AND REGULATIONS OF THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT.

FISCAL IMPACT
There is no fiscal impact associated with the recommended actions. There will be no change in net General Fund cost and no additional staff years.

BUSINESS IMPACT STATEMENT
Adopting the proposed amendments to Rule 69.2.1 is not expected to pose significant impacts on affected industries in the San Diego region. The proposed emission limits are feasible, and compliant units are currently available due to similar requirements already in place in several California air districts. The proposed requirements apply to new units only and do not require early replacement or modification of existing equipment. While low-emitting units are more expensive than conventional ones, they are more energy efficient and are therefore cheaper to operate, with an estimated payback over the life of the equipment.

Equipment manufacturers will be required to certify their new units' compliance with the emission limits. However, the manufacturers already comply with this requirement in several other California air districts. The proposal increases regulatory certainty for the manufacturers by enhancing consistency with standards across the state.

SUBJECT: NOTICED PUBLIC HEARING - ADOPTION OF AMENDMENTS TO RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, STEAM GENERATORS, AND LARGE WATER HEATERS (DISTRICTS: ALL)

ADVISORY BOARD STATEMENT

The Air Pollution Control District Advisory Committee (Advisory Committee) considered the proposed amendments to Rule 69.2.1 during its meeting on December 11, 2019. The Advisory Committee is comprised of a total of nine seats. Four of those seats are currently vacant. Of the five Advisory Committee members currently appointed, two attended the meeting and they both expressed support for the proposed amendments. Meeting materials, including the proposed amendments to Rule 69.2.1, were shared with all appointed Advisory Committee members in advance of the meeting. No concerns with the proposal were raised to the Air Pollution Control District by Advisory Committee members.

BACKGROUND

The San Diego region does not meet the California and National Ambient Air Quality Standards for ozone, and therefore is classified as an ozone nonattainment area. Both federal and State laws require the San Diego County Air Pollution Control District (District) to adopt and implement rules to further control and reduce ozone-forming emissions, specifically volatile organic compounds and oxides of nitrogen (NOx), which is the key pollutant that currently drives ozone pollution levels in the San Diego region. Additionally, as technologies to control air pollutant emissions advance and lower limits on the allowable emission become feasible, the District is required by federal and State law to update its rules accordingly, and the proposed amended rule is the result of these requirements.

Current Rule 69.2.1, adopted in 2009, controls NOx emissions from new small boilers, process heaters, and steam generators with a heat input rating between 600,000 and 2 million British thermal units (Btu) per hour. Proposed amended Rule 69.2.1 establishes lower, more health-protective emission limits and expands rule applicability to new units with a heat input rating between 75,000 and 2 million Btu per hour. The resulting emission reductions will improve air quality and public health, and help the region attain federal and State clean air standards for ozone pollution in a timely manner. Additionally, the new lower-emitting units are more fuel-efficient and by consuming less fuel they emit less greenhouse gases (such as carbon dioxide) and therefore help support the region's climate goals.

An estimated 50,900 existing units are currently in place in facilities throughout the region. When these existing units are replaced at the end of their useful life, the new replacement units will be subject to the proposed requirements. The proposed amended rule will reduce NOx emissions from affected equipment by approximately 67% (277 tons per year) once all existing units are ultimately replaced with new low-emitting units. This reduction in ozone-forming emissions will have the same air quality benefit in the region as permanently removing 271,000 cars from our roads.

If adopted, proposed amended Rule 69.2.1 will be submitted to the U.S. Environmental Protection Agency (EPA) for approval into the State Implementation Plan for attaining and maintaining the air quality standards. The rule will become effective on July 1, 2021, providing time for affected manufacturers and distributors to transition to the new requirements.

SUBJECT: NOTICED PUBLIC HEARING - ADOPTION OF AMENDMENTS TO RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, STEAM GENERATORS, AND LARGE WATER HEATERS (DISTRICTS: ALL)

Customer/Stakeholder Notification
District staff conducted a public workshop to gather input on the proposed amended rule from affected parties. A workshop notice was posted on the District's website and sent to approximately 5,000 recipients including each air quality permit holder and chamber of commerce in the region, members of the Air Pollution Control District Advisory Committee, subscribers to the County's email notification service, the EPA and CARB.

The workshop was attended by 34 people, including industry representatives. District staff prepared responses to all comments and questions received, which were provided to the workshop participants in a Workshop Report (Attachment D). If the rule amendments are adopted, staff will conduct additional outreach including the distribution of an advisory notice to further inform potentially affected parties.

SOCIOECONOMIC IMPACT ASSESSMENT
State law requires the Air Pollution Control District to perform an assessment of the socioeconomic impacts when adopting, amending or repealing a rule that will significantly affect air quality or emission limitations. A Socioeconomic Impact Assessment was prepared for proposed amended Rule 69.2.1 (Attachment E). The proposed emission limits are feasible, and compliant units are currently available due to similar requirements already in place in several California air districts. The proposed requirements apply to new units only and do not require early replacement or modification of existing units. While low-emitting units are more expensive than conventional ones, they are more energy efficient and are therefore cheaper to operate, with an estimated payback over the life of the equipment. Equipment manufacturers will be required to certify their new units' compliance with the emission limits. However, the manufacturers already comply with this requirement in several other California air districts, and the proposal increases regulatory certainty for the manufacturers by enhancing consistency with standards across the state. Therefore, the adoption of proposed amended Rule 69.2.1 is not expected to pose significant impacts on the affected industry sectors in San Diego county.

ENVIRONMENTAL STATEMENT
The California Environmental Quality Act (CEQA) requires an environmental review for certain actions. The Air Pollution Control District (District) has conducted a review of whether CEQA applies to the adoption of the proposed amendments to Rule 69.2.1. The proposed rule amendments are required by federal and State law, which calls for adoption of every feasible control measure to accelerate progress toward achieving the ambient air quality standard for ozone. Proposed amended Rule 69.2.1 will protect the environment by promoting significant reductions in NOx emissions. Therefore, District staff determined that the adoption of the proposed amendments to Rule 69.2.1 are exempt from the provisions of CEQA pursuant to California Code of Regulations, Title 14, Section 15308, as an action taken to assure the protection of the environment, and pursuant to Section 15061(b)(3), since it can be seen with certainty that there is no possibility that the activity in question may have a significant adverse effect on the environment.

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LINKAGE TO THE COUNTY OF SAN DIEGO STRATEGIC PLAN

Today's proposed actions support the Sustainable Environments/Thriving Initiative in the County of San Diego's 2020-2025 Strategic Plan with an objective to enhance the quality of the environment by focusing on sustainability, pollution prevention and strategic planning. The proposed amendments to Rule 69.2.1 will reduce air pollutant emissions and improve air quality in San Diego county.

Respectfully submitted,

SARAH E. AGHASSI
Deputy Chief Administrative Officer

ROBERT REIDER
Interim Director/Air Pollution Control Officer

ATTACHMENT(S)

Attachment A – Resolution Adopting Amendments to Rule 69.2.1 – Small Boilers, Process Heaters, Steam Generators, and Large Water Heaters, of Regulation IV of the Rules and Regulations of the San Diego County Air Pollution Control District
Attachment B – Comparative Analysis
Attachment C – Incremental Cost-Effectiveness Analysis
Attachment D – Workshop Report
Attachment E – Socioeconomic Impact Assessment
Attachment F – Rule 69.2.1 – Small Boilers, Process Heaters, Steam Generators, and Large Water Heaters Change Copy

SUBJECT: NOTICED PUBLIC HEARING - ADOPTION OF AMENDMENTS TO RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, STEAM GENERATORS, AND LARGE WATER HEATERS (DISTRICTS: ALL)

AGENDA ITEM INFORMATION SHEET

REQUIRES FOUR VOTES: ☐ Yes ☒ No

WRITTEN DISCLOSURE PER COUNTY CHARTER SECTION 1000.1 REQUIRED
☐ Yes ☒ No

PREVIOUS RELEVANT BOARD ACTIONS:
March 25, 2009 (AP1) Adoption of new Rule 69.2.1 - Small Boilers, Process Heaters, and Steam Generators

BOARD POLICIES APPLICABLE:
N/A

BOARD POLICY STATEMENTS:
N/A

MANDATORY COMPLIANCE:
N/A

ORACLE AWARD NUMBER(S) AND CONTRACT AND/OR REQUISITION NUMBER(S):
N/A

ORIGINATING DEPARTMENT: Air Pollution Control District

OTHER CONCURRENCE(S): None

CONTACT PERSON(S):

Robert Reider	Angela Ortega
Name	Name
(858) 586-2700	(858) 586-2753
Phone	Phone
Robert.Reider@sdcounty.ca.gov	Angela.Ortega@sdcounty.ca.gov
E-mail	E-mail

Resolution No.: 20-118
Meeting Date: 07/08/2020 (AP1)

RESOLUTION ADOPTING AMENDMENTS TO RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, STEAM GENERATORS, AND LARGE WATER HEATERS, OF REGULATION IV OF THE RULES AND REGULATIONS OF THE SAN DIEGO COUNTY AIR POLLUTION CONTROL DISTRICT

On motion of Member Jacob, seconded by Member Gaspar, the following resolution is adopted:

WHEREAS, the San Diego County Air Pollution Control Board (Board), pursuant to Section 40702 of the Health and Safety Code, adopted Rules and Regulations of the Air Pollution Control District of San Diego County; and

WHEREAS, said Board now desires to amend said Rules and Regulations; and

WHEREAS, notice has been given and a public hearing has been held relating to the amendment of said Rules and Regulations pursuant to Section 40725 of the Health and Safety Code and Section 51.102 of Title 40 of the Code of Federal Regulations; and

WHEREAS, pursuant to Section 40727 of the Health and Safety Code, the San Diego County Air Pollution Control Board makes the following findings:

(1) (Necessity) The adoption of proposed amended Rule 69.2.1 is necessary in order to implement federal requirements for Reasonably Available Control Technology and state requirements for all feasible control measures to achieve the ambient air quality standards for ozone in San Diego County;

(2) (Authority) The adoption of proposed amended Rule 69.2.1 is authorized by Health and Safety Code Section 40702;

(3) (Clarity) Proposed amended Rule 69.2.1 can be easily understood by persons directly affected by it;

(4) (Consistency) The adoption of proposed amended Rule 69.2.1 is in harmony with, and not in conflict with or contrary to, existing statutes, court decisions, and state and federal regulations;

(5) (Non-duplication) The adoption of proposed amended Rule 69.2.1 will not duplicate existing District, state, or federal requirements;

(6) (Reference) The adoption of proposed amended Rule 69.2.1 is necessary to comply with: federal law, Clean Air Action Section 182(b)(2), which requires implementation of Reasonably Available Control Technology on stationary sources of oxides of nitrogen emissions; and state law, California Health and Safety Code

Section 40914(b)(2), which requires adoption of every feasible control measure to reduce ozone-precursor emissions;

WHEREAS, the Board further finds pursuant to Health and Safety Code Section 40001 that adoption of proposed amended Rule 69.2.1 will facilitate the attainment of ambient air quality standards; and

WHEREAS, the Board further finds that an analysis comparing proposed amended Rule 69.2.1 with applicable requirements of federal and local regulations has been prepared pursuant to Health and Safety Code Section 40727.2; and

WHEREAS, the Board further finds that an incremental cost-effectiveness analysis pursuant to Health and Safety Code Section 40920.6(a) has been prepared for proposed amended Rule 69.2.1 and has been made available for public review and comment, and has been actively considered; and

WHEREAS, the Board further finds that an assessment of socioeconomic impacts of proposed amended Rule 69.2.1, as required by Section 40728.5 of the Health and Safety Code, has been prepared and has been made available for public review and comment, and that the socioeconomic impacts of the proposed amended rule have been actively considered and the proposed amended rule will not have adverse socioeconomic impacts.

NOW THEREFORE IT IS RESOLVED AND ORDERED by the San Diego County Air Pollution Control Board that the Rules and Regulations of the Air Pollution Control District of San Diego County be, and hereby are amended as follows:

1. Proposed amended Rule 69.2.1 is to read as follows:

RULE 69.2.1 SMALL BOILERS, PROCESS HEATERS, STEAM GENERATORS, AND LARGE WATER HEATERS (Adopted *(date of adoption)*; Effective July 1, 2021)

(a) **APPLICABILITY**

Except as otherwise provided in Section (b), this rule shall apply to any person who manufactures, sells, offers for sale or distributes for use within San Diego County, or installs within San Diego County a new unit (boiler, process heater, steam generator, or water heater) with a heat input rating from 75,000 Btu per hour to 2 million Btu per hour.

(b) **EXEMPTIONS**

(1) The provisions of this rule shall not apply to the following:

(i) Any waste heat recovery boilers that are used to recover heat from the exhaust of gas turbines, internal combustion engines, or other combustion equipment.

(ii) Furnaces, kilns, and any combustion equipment where the material being heated is in direct contact with the products of combustion.

(iii) Thermal oxidizers and associated waste heat recovery equipment.

(iv) Hot water pressure washers.

(c) **DEFINITIONS**

For the purposes of this rule, the following definitions shall apply:

(1) **"Boiler"** means any combustion equipment fired with gaseous and/or liquid fuel and used to produce steam or to heat water.

(2) **"Btu"** means British thermal unit.

(3) **"Furnace"** means any enclosed structure in which heat is produced by the combustion of any fuel.

(4) **"Gaseous Fuel"** means natural gas or liquefied petroleum gas.

(5) **"Heat Input Rating"** means the maximum steady state heat input capacity of a unit, in Btu per hour, as specified by the manufacturer.

(6) **"Hot Water Pressure Washer"** means a high-pressure cleaning machine in which the hot water discharge line (spray nozzle) is hand supported and is intended for commercial and industrial applications.

(7) **"Installed"** means a unit is located onsite at the final destination and is capable of operation.

(8) **"Instantaneous Water Heater"** means a water heater that heats water only when it flows through a heat exchanger.

(9) **"Kiln"** means an oven, furnace, or heated enclosure used for processing a substance by burning, firing, or drying.

(10) **"Liquefied Petroleum Gas (LPG)"** means a gas, consisting primarily of propane, propylene, butane, and butylene in various mixtures, that is stored as a liquid at high pressure.

(11) **"Liquid Fuel"** means any fuel which is a liquid at standard conditions, including distillate oils.

(12) **"New Unit"** means a unit installed, manufactured, or sold on or after July 1, 2021.

(13) **"Process Heater"** means any combustion equipment fired with liquid and/or gaseous fuel and which transfers heat from the combustion gases to water or process streams. Pool heaters used for swimming pools, spas and/or therapy pools shall be considered process heaters.

(14) **"PUC Quality Natural Gas"** means California Public Utility Commission Quality Natural Gas that is any gaseous fuel, gas-containing fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard cubic feet. PUC quality natural gas also means high methane gas of at least 80% methane by volume.

(15) **"Stationary Source"** means the same as defined in Rule 2 - Definitions.

(16) **"Steam Generator"** means any combustion equipment fired with gaseous and/or liquid fuel and used to produce steam or to heat water.

(17) **"Tank Type Water Heater"** means a water heater with an integral closed vessel in which water is heated and stored for use external to the vessel.

(18) **"Thermal Oxidizer"** means combustion equipment fired with gaseous fuel and used to control emissions of air contaminants from industrial or commercial processes.

(19) **"Unit"** means any boiler, steam generator, process heater, or water heater.

(20) **"Water Heater"** means a closed vessel in which water heated by combustion of natural gas is withdrawn for use external to the vessel at pressures not exceeding 160 psig. Water heater consists of the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C). Types of water heaters include instantaneous and tank type water heaters.

(d) **STANDARDS**

Except as otherwise provided in Section (b), effective July 1, 2021, no person shall manufacture, distribute, sell, offer for sale, or install within San Diego County any new unit that has emissions that exceed the following levels:

Equipment Type	Fuel	Heat Input Rating (Btu per hour)	Concentration of NOx^1 (ppmv)	Concentration of CO^2 (ppmv)
New unit	Natural gas	75,000 to 400,000	20	N/A
New pool heater	Natural gas	75,000 to 400,000	55	N/A

New unit	Natural gas	Greater than 400,000 to 2,000,000	20	400
New unit	Non PUC Gas or Liquid fuel	75,000 to 400,000	77	N/A
New unit	Non PUC Gas or Liquid fuel	Greater than 400,000 to 2,000,000	30	400

[1]Calculated as nitrogen dioxide at 3% oxygen on a dry basis.
[2]Calculated as carbon monoxide at 3% oxygen on a dry basis.

(e) **CERTIFICATION STATEMENT**

(1) A manufacturer of any new unit to be offered for sale within San Diego County shall submit to the Air Pollution Control Officer a statement certifying that each model of boiler, process heater, steam generator, or water heater subject to the requirements of Section (d) complies with the provisions of this rule.

(i) The statement shall be signed, dated, and attested to the accuracy of all information by a representative of the manufacturer.

(ii) The statement shall be submitted at least 30 days before the unit model is offered for sale, sold, or installed within San Diego County.

(iii) The statement shall include:

(A) Name and address of manufacturer,

(B) Brand name,

(C) Model number,

(D) Description of the model unit being certified, including burner type,

(E) Heat input rating as specified on the nameplate, and

(F) Oxides of nitrogen and carbon monoxide emission test results of each model being certified.

(2) A manufacturer shall submit to the Air Pollution Control Officer a new certification statement for any unit model whose design is changed in any manner which may alter oxides of nitrogen or carbon monoxide emissions.

(3) Alternatively, to comply with Subsections (e)(1) or (e)(2), a manufacturer may submit to the Air Pollution Control Officer a certification statement for the unit model as required in the South Coast Air Quality Management District (SCAQMD) Rule 1146.2, Section (d) – Certification.

(f) **LABELING**

A manufacturer shall display on the shipping carton and the nameplate of every unit to be offered for sale within San Diego County, the model number and certification status of the unit complying with Section (e), or alternatively, the most current requirements of the SCAQMD Rule 1146.2.

(g) **RECORD KEEPING**

A manufacturer shall keep test records for oxides of nitrogen and carbon monoxide emissions and certification records for as long as the new unit model is offered for sale or sold within San Diego County, or for three calendar years after date of manufacture, whichever is longer. Such records shall be provided to the District upon request.

(h) **TEST METHODS**

When more than one test method or set of test methods are specified in this Section, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.

(1) To determine compliance with Section (d), the manufacturer shall obtain measurements of oxides of nitrogen and carbon monoxide contents conducted by an independent testing laboratory in accordance with:

(i) San Diego County Air Pollution Control District Test Method 100, Test Procedures for the Determination of Nitrogen Oxides, Carbon Monoxide and Diluent Gases by Continuous Emission Monitoring, May 1995, or its most current version approved by the U.S. Environmental Protection Agency (EPA), or

(ii) SCAQMD Test Method 100.1, Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling, March 1989, or its most current version approved by EPA.

(2) For natural gas-fired units, emission tests shall be performed in accordance with the procedures and methods outlined in the SCAQMD Protocol: Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers, January 1998.

(3) Other test methods which are determined to be equivalent to the test methods specified in this rule and approved, in writing, by the Air Pollution Control Officer, California Air Resources Board and EPA.

IT IS FURTHER RESOLVED AND ORDERED that proposed amended Rule 69.2.1 of Regulation IV shall take effect on July 1, 2021.

APPROVED AS TO FORM AND LEGALITY
COUNTY COUNSEL

BY: Paula Forbis, Senior Deputy

The foregoing Resolution was passed and adopted by the Air Pollution Control District, County of San Diego, State of California, on this 8th day of July, 2020, by the following vote:

AYES: Cox, Jacob, Gaspar, Fletcher, Desmond

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STATE OF CALIFORNIA)
County of San Diego)SS

I hereby certify that the foregoing is a full, true and correct copy of the Original Resolution entered in the Minutes of the San Diego County Air Pollution Control Board.

ANDREW POTTER
Clerk of the Air Pollution Control Board

By: _____
Joana Santiago, Deputy

Resolution No. 20-118
Meeting Date: 07/08/2020 (AP1)

COMPARATIVE ANALYSIS

PROPOSED AMENDED RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, STEAM GENERATORS, AND LARGE WATER HEATERS

Statutory Requirements

Prior to adopting, amending, or repealing a rule or regulation, California Health and Safety Code Section 40727 requires findings of necessity, authority, clarity, consistency, non-duplication, and reference. As part of the consistency finding to ensure proposed rule requirements do not conflict with or contradict other District or federal regulations, Health and Safety Code Section 40727.2(a) requires the District to perform a written analysis identifying and comparing the air pollution control standards and other provisions of proposed amended Rule 69.2.1 with existing or proposed District rules and guidelines and existing federal rules, requirements, and guidelines applying to the same source category.

Comparison with existing District rules and regulations

There are no prohibitory District rules that apply to combustion units of this size. In addition, such units fired on natural gas are not subject to the District Permit to Operate requirements pursuant to Rule 11 (Exemption from Rule 10 Permit Requirements) and consequently are not subject to the New Source Review (NSR) rules.

Combustion units operating on liquid fuel with heat input rating from 1 million British thermal units (Btu) per hour to 2 million Btu per hour would require a District Permit to Operate and comply with the NSR requirements. However, based on the emission limits of proposed amended Rule 69.2.1 and a worst case scenario of continuous 24-hour daily operation, the potential to emit for a 2 million Btu per hour unit would be significantly less than the 10 pounds per day NSR applicability threshold for Best Available Control Technology (BACT).

Comparison with federal NSPS Subpart Dc

New Source Performance Standards (NSPS) Subpart Dc – Small Industrial-Commercial-Institutional Steam Generating Units is applicable to units with a heat input rating of 10 million Btu per hour or more. Thus, NSPS Subpart Dc does not apply to combustion equipment with a heat input rating from 75,000 Btu per hour to 2 million Btu per hour that are subject to proposed amended Rule 69.2.1.

Conclusion

There are no conflicts or contradictions between proposed amended Rule 69.2.1 and BACT requirements. In addition, there are no applicable federal regulations for combustion equipment subject to proposed amended Rule 69.2.1.

INCREMENTAL COST-EFFECTIVENESS ANALYSIS

PROPOSED AMENDED RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, STEAM GENERATORS, AND LARGE WATER HEATERS

Health and Safety Code Section 40920.6(a) requires air districts to identify one or more potential control options that achieve at least the same benefit as the proposed rule, assess the cost-effectiveness of those options, and calculate the incremental cost-effectiveness of each identified option. Incremental cost-effectiveness is defined as the difference in control costs divided by the difference in emission reductions between two potential control options achieving the same emission reduction goal.

Proposed amended Rule 69.2.1 will reduce oxides of nitrogen (NOx) emissions from small boilers, process heaters, steam generators, and large water heaters with a heat input rating from 75,000 British thermal units (Btu) per hour to 2 million Btu per hour. The most efficient and cheapest technology to achieve the emission standards required by the rule is the use of low-NOx burners.

Two other technologies exist that will provide higher emission reductions than those required by the proposed amended rule – flue gas recirculation and catalytic reduction. However, both technologies are significantly more expensive and not practicable for units that will be regulated by proposed amended Rule 69.2.1. In addition, equipment subject to the proposed amended rule and complying with its requirements by using low-NOx burners is already available in the marketplace.

There are no other potential control options that will achieve the same emission reduction goals and the same benefit as the proposed amended rule. Therefore, the incremental cost analysis requirement is not applicable to proposed amended Rule 69.2.1.

ATTACHMENT D

AIR POLLUTION CONTROL DISTRICT
COUNTY OF SAN DIEGO

DRAFT PROPOSED AMENDMENTS TO
RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, STEAM GENERATORS, AND LARGE WATER HEATERS,
DRAFT PROPOSED NEW RULE 69.2.2 – MEDIUM BOILERS, PROCESS HEATERS, AND STEAM GENERATORS,
AND RELATED DRAFT PROPOSED AMENDMENTS TO
RULE 11 – EXEMPTIONS FROM RULE 10 PERMIT REQUIREMENTS AND
RULE 12 – REGISTRATION OF SPECIFIED EQUIPMENT

WORKSHOP REPORT

The San Diego County Air Pollution Control District (District) held a public workshop on September 27, 2019, to discuss and receive input on the draft proposed amendments to Rule 69.2.1 – Small Boilers, Process Heaters, Steam Generators, and Large Water Heaters; draft proposed new Rule 69.2.2 – Medium Boilers, Process Heaters, and Steam Generators; and related draft proposed amendments to Rule 11 – Exemptions from Rule 10 Permit Requirements and Rule 12 – Registration of Specified Equipment. A meeting notice was mailed to each permit holder, applicant, registration holder, and chamber of commerce in the region, as well as the U.S. Environmental Protection Agency (EPA) and California Air Resources Board (CARB). Additionally, a meeting notice was posted on the District's website and distributed to interested parties including through the County of San Diego's electronic mail service.

The workshop was attended by 34 people. A summary of the comments and District responses are provided below:

RULE 69.2.1 COMMENTS

1. WORKSHOP COMMENT

While the rule is intended to apply to equipment manufacturers, the words "or installs" in proposed Section (a) – Applicability could unintentionally subject owners or operators of a boiler, process heater, steam generator, or water heater (unit) to the rule. The District should clarify the rule applicability to minimize potential confusion or compliance issues for the regulated community.

DISTRICT RESPONSE

The District disagrees. Pursuant to both existing Rule 69.2.1 and the proposed amendments, any person who installs a new unit, whether an owner, operator, or third party, must ensure that the equipment complies with the requirements of Rule 69.2.1.

2. WORKSHOP COMMENT

Does the proposed amended rule apply to the sale of a used boiler with heat input rating from 75,000 to 600,000 Btu/hour?

DISTRICT RESPONSE

Yes, a used boiler that is sold or offered for sale on or after January 1, 2021, would be considered a "new unit" as defined in proposed Subsection (c)(14) and therefore subject to the proposed amended rule.

3. WORKSHOP COMMENT

Is a boiler (with heat input rating from 75,000 to 600,000 Btu/hour) that is relocated from one stationary source to another considered an existing unit?

DISTRICT RESPONSE

The relocated unit would be considered an existing unit only if both stationary sources are under the same ownership. Proposed Subsection (c)(17) has been revised to clarify this.

4. WORKSHOP COMMENT

If ownership of an existing unit (with heat input rating from 75,000 to 600,000 Btu/hour) is transferred from one owner to another, would the equipment then be considered as a new unit?

DISTRICT RESPONSE

The unit would be considered as an existing unit only if the transfer of ownership occurs before January 1, 2021, otherwise it would be considered a new unit.

5. WORKSHOP COMMENT

Are existing units required to undergo emissions testing?

DISTRICT RESPONSE

No. Proposed Subsection (e)(1) has been revised to clarify that only a manufacturer of any *new* unit offered for sale in San Diego County is required to conduct emissions testing for each model unit to certify compliance with the requirements of the rule.

6. WORKSHOP COMMENT

What documentation must an owner or operator of an existing unit maintain to demonstrate that it is not subject to the rule?

DISTRICT RESPONSE

The proposed requirements for record keeping apply to manufacturers only. Proposed Section (g) – Record Keeping has been revised to clarify this.

7. CARB COMMENT

CARB has no official comments at this time.

8. EPA COMMENT

Proposed Subsection (b)(1)(iv) exempts from the rule units with a heat input rating from 75,000 Btu per hour to 400,000 Btu per hour that operate exclusively to heat residential swimming pools and hot tubs. However, there are residential pool and hot tub heaters commercially available that can comply with a NOx limit of 55 parts per million by volume (ppmv). Therefore, proposed Subsection (b)(1)(iv) should be removed, and such equipment should be subject to a NOx limit of 55 ppmv similar to other analogous air district rules.

DISTRICT RESPONSE

The District agrees. Proposed Subsection (b)(1)(iv) has been removed, and proposed Section (d) – Standards has been revised to include a NOx emission limit of 55 ppmv for residential pool and hot tub heaters as suggested.

9. EPA COMMENT

Proposed Subsection (b)(1)(vi) exempts from the rule dual-fueled units. This exemption is a rule approvability issue because there are commercially available natural gas and liquefied petroleum gas (LPG) dual-fueled units that can comply with a 20 ppmv NOx limit, and natural gas and heating oil dual-fueled units that can comply with a 40 ppmv NOx limit. Therefore, proposed Subsection (b)(1)(vi) should be removed.

DISTRICT RESPONSE

The District agrees. Proposed Subsection (b)(1)(vi) has been removed as suggested.

10. EPA COMMENT

Proposed Subsection (b)(1)(vii) exempts from the rule existing or relocated units. This exemption is redundant to the rule applicability and should be removed.

DISTRICT RESPONSE

The District agrees. Proposed Subsection (b)(1)(vii) has been removed as suggested.

11. EPA COMMENT

Proposed Subsection (b)(2) exempts, from proposed Sections (e) – Certification Statement and (f) – Labeling, new units with a heat input rating from 75,000 Btu per hour to less than 1,000,000 Btu per hour that operate primarily on non-Public Utility Commission quality natural gas or liquid fuel. This exemption is a rule approvability issue because it impacts the enforcement of proposed Sections (g) – Record Keeping and (h) – Test Methods for new units with a heat input rating from 75,000 Btu per hour to less than 1,000,000 Btu per hour. In addition, there are commercially available oil-fired units that can meet the NOx emission limits specified in proposed Section (d) – Standards and appear to meet the certification and labeling requirements of the rule. Therefore, proposed Subsection (b)(2) should be removed.

DISTRICT RESPONSE

The District agrees. Proposed Subsection (b)(2) has been removed as suggested.

12. EPA COMMENT

In proposed Subsection (e)(1)(iii), the name and address of the manufacturer should be included in the list of items required in the certification statement, in addition to the description of the model being certified, including burner type (or fuel-type), for rule approvability and consistency with other analogous air district rules.

DISTRICT RESPONSE

The District agrees. Proposed Subsection (e)(1)(iii) has been revised as suggested.

RULE 69.2.2 COMMENTS

13. WORKSHOP COMMENT

For consistency with the National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart DDDDD for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, the following categories of boilers should be added to proposed Section (b) – Exemptions:

temporary portable boilers; rental boilers for supplemental steam; training boilers; and boilers or process heaters used specifically for research and development, including test steam boilers used to provide steam for testing the propulsion systems on military vessels.

DISTRICT RESPONSE

The District disagrees. NESHAP Subpart DDDDD regulates major sources of hazardous air pollutants. By contrast, proposed Rule 69.2.2 regulates oxides of nitrogen as a criteria pollutant and precursor to ozone pollution. The analogous boiler rules in other air districts do not provide the suggested exemptions.

14. WORKSHOP COMMENT

Are temporary units required to be registered with the District?

DISTRICT RESPONSE

Yes. Temporary units are subject to the requirements of the proposed rule, including obtaining a Certificate of Registration or Permit to Operate.

15. WORKSHOP COMMENT

If a unit is purchased before January 1, 2021, but installed after that date, is the equipment considered a new unit upon installation?

DISTRICT RESPONSE

Yes. Per the definition of "new unit" in proposed Subsection (c)(16), a unit installed on or after January 1, 2021, will be considered a new unit subject to the applicable requirements.

16. WORKSHOP COMMENT

For consistency, proposed Section (d) – Standards should include the tuning procedure specified in NESHAP Subpart DDDDD as an acceptable option.

DISTRICT RESPONSE

The District agrees. Proposed Subsections (d)(2) and (3) have been revised to reference the tuning procedure specified in NESHAP Subpart DDDDD, which is found in 40 CFR Part 63, Sections 63.7540(a)(10)(i) through (vi).

17. WORKSHOP COMMENT

Does proposed Section (e) – Monitoring Requirements apply to units fueled exclusively by natural gas, or to units fueled exclusively by liquid fuel?

DISTRICT RESPONSE

No. The monitoring requirements of proposed Section (e) apply only to new dual-fueled units capable of burning gaseous and liquid fuel.

18. WORKSHOP COMMENT

Proposed Section (e) – Monitoring Requirements refers to new units, but does not address existing units. It would be an additional expense for the owner or operator to install a fuel meter for an existing unit. Proposed Section (e) should be revised to ensure that the requirement to install a fuel meter does not apply to existing units.

DISTRICT RESPONSE

The suggested revision is unnecessary because proposed Section (e) applies only to an owner or operator of a new unit. Owners or operators of an existing unit are not subject to this proposed requirement.

19. WORKSHOP COMMENT

Will registered or permitted units be included in a site's annual inspection? If so, will a District inspector require access to physically inspect the unit?

DISTRICT RESPONSE

Yes, units with a Certificate of Registration or Permit to Operate will be included in a site's annual inspection. The inspection will include a review of the site's records to verify compliance with proposed Section (h) – Record Keeping Requirements. Typically, physical access to the unit will not be necessary.

20. WORKSHOP COMMENT

What will be the process and fees required to apply for a Certificate of Registration or a Permit to Operate for a boiler?

DISTRICT RESPONSE

Application forms will be available on the District's website. Once a completed application and applicable fee are submitted to the District, the application will be evaluated for approval. Upon District approval, a Certificate of Registration or Permit to Operate, as applicable, will be issued.

Evaluating and processing a registration application will require less District labor and time than for a permit application, and thus will be less costly. The proposed fee to apply for a registration will be determined as part of the next proposed update of District Rule 40 – Permit and Other Fees, which is scheduled for spring 2020.

Based on preliminary information, the registration application fee is roughly estimated to be approximately $1,000, in addition to an annual renewal fee that is roughly estimated to be approximately $200. The actual proposed fee values will be included in future draft amendments to Rule 40, which will be distributed for public review and comment prior to consideration of adoption by the Board at a public hearing.

21. WORKSHOP COMMENT

What are the conditions that will be specified on a Certificate of Registration for a boiler?

DISTRICT RESPONSE

The conditions will include the requirements for annual tuning, record keeping, and may include other conditions referenced from other applicable District rules, such as Rule 51 – Nuisance.

22. WORKSHOP COMMENT

Is an owner or operator required to apply for a Certificate of Registration before the installation of a new boiler?

DISTRICT RESPONSE

Yes. Before a new unit is purchased or installed, an application for a Certificate of Registration or Permit to Operate shall be submitted and approved by the District.

23. WORKSHOP COMMENT

What is the timeframe for receiving a Certificate of Registration for a boiler after a complete application is submitted to the District?

DISTRICT RESPONSE

In most cases, the District anticipates issuing a Certificate of Registration on the same business day a completed application is submitted.

24. WORKSHOP COMMENT

Why would someone choose to apply for a Permit to Operate instead of a Certificate of Registration for a boiler?

DISTRICT RESPOSE

There may be a rare circumstance in which a unit that is not certified (by the manufacturer to meet the emissions standards) is needed to support a process or operation that requires a Permit to Operate. Proposed Subsection (b)(3) exempts from the certification requirement any unit that is used in conjunction with any equipment, product line, system, process line or process that is subject to permit requirements. In this case, an owner or operator of an uncertified unit is required to apply for a Permit to Operate because the unit is not eligible for a Certificate of Registration.

25. WORKSHOP COMMENT

Would an existing certified unit ever require a Permit to Operate instead of a Certificate of Registration?

DISTRICT RESPONSE

No, the District is not aware of any instance in which it would require a Permit to Operate in lieu of a Certificate of Registration for an existing certified unit.

26. WORKSHOP COMMENT

Will the District maintain a list of certified units on its website to help facilitate the registration process?

DISTRICT RESPONSE

Yes, a list of certified units will be maintained on the District website.

27. WORKSHOP COMMENT

What is the anticipated cost increase for a certified unit that meets the proposed requirements versus a conventional unit?

DISTRICT RESPONSE

The District estimates that the capital cost of a certified unit is 35% more than a conventional unit. Certified units tend to be more fuel efficient and the resulting savings in fuel costs will help to offset the increase in capital cost.

28. WORKSHOP COMMENT

Is the estimated emissions reduction based on the replacement of existing units?

DISTRICT RESPONSE

Yes. The District estimates an emissions reduction of 194 tons of NOx per year upon full implementation of the rule when, through attrition, all existing units are eventually replaced at the end of their useful lives by new compliant equipment.

29. WORKSHOP COMMENT

The District should compare the additional resources that stationary sources would need to expend on new rules such as Rule 69.2.2 versus the environmental benefits that may be realized through implementation of the rule. Continuing to restrict emissions from stationary sources will have little effect on air quality considering that most of the NOx and VOC emissions are currently emitted from mobile sources.

DISTRICT RESPONSE

San Diego County does not attain the current federal and State clean air standards for ozone pollution. Accordingly, the District is mandated by federal and State law to adopt all feasible measures to further control and reduce ozone-forming emissions from stationary sources in the region, including oxides of nitrogen (NOx) from boilers, process heaters, and steam generators subject to proposed new Rule 69.2.2. Similar boiler rules are already in place throughout much of California.

The District acknowledges that controlling and reducing emissions from sources under its authority, i.e., stationary sources, is only part of the solution. Mobile sources, which are under State and federal control, contribute the majority of air pollutant emissions in the region. Accordingly, the District continues to work with our State and federal partners to seek the maximum feasible reductions from mobile sources. Additionally, the District will continue to offer monetary incentives to increase the penetration of the cleanest technologies in the mobile source sector and achieve the emissions reductions needed.

30. CARB COMMENT

CARB has no official comments at this time.

31. EPA COMMENT

Proposed Subsections (d)(2) and (3) specify the tuning procedures for applicable units. However, the rule allows for District discretion in determining acceptable boiler tuning procedures, and is a rule approvability issue. Either remove this provision for District discretion, or provide within the rule the minimum criteria for what would constitute approvable tuning requirements.

DISTRICT RESPONSE

The District agrees. Proposed Subsections (d)(2) and (3) have been revised to remove "*or other tuning procedure approved by the Air Pollution Control Officer*."

32. EPA COMMENT

Proposed Subsection (f)(3) references the Bay Area AQMD Regulation 9, Rule 7, certification program for boilers as an alternative option for certifying units offered for sale in San Diego County. However, the version of Bay Area's rule including this certification program is not in the California State Implementation Plan (SIP), and would need to be submitted into the SIP or otherwise addressed since this is a rule approvability issue. Proposed Subsection (f)(3) should be removed, but the EPA is willing to work with the District to explore alternative methods of approvable certification for these units.

DISTRICT RESPONSE

The District agrees. Proposed Subsection (f)(3) has been removed as suggested. New proposed Subsection (f)(2) has been added to require the certification application to demonstrate that the unit model was tested in accordance with the test methods in proposed Section (i) – Test Methods. In addition, new proposed Subsection (f)(3) has been added to clarify that after completing the review of the application for certification and source test report, the Air Pollution Control Officer shall either approve the certification and include the subject model on the list of certified devices, or deny the certification.

33. EPA COMMENT

The records retention schedule specified in proposed Section (h) – Record Keeping Requirements should be extended to five years to improve enforceability.

DISTRICT RESPONSE

The District disagrees. The three-year records retention requirement is consistent with all other District prohibitory rules.

RULE 11 COMMENT

34. WORKSHOP COMMENT

There seems to be a conflict between Rule 11 – Exemptions from Rule 10 Permit Requirements, Rule 12 – Registration of Specified Equipment, and Rule 69.2.2 – Medium Boilers, Process Heaters, and Steam Generators. Rule 11 exempts from Permit to Operate requirements a unit with a heat input rating of 2 million Btu per hour or less fired exclusively with natural gas and/or liquefied petroleum gas. Rule 69.2.2 applies to units with a heat input rating greater than 2 million Btu per hour to less than 5 million Btu per hour.

Units rated at 2 million Btu per hour are unaddressed in Rule 11, which may lead to confusion and compliance issues. Proposed Subsection (d)(2)(iv)(B) in Rule 11 should be revised to "less than 2 million Btu per hour fired exclusively with natural gas and/or liquefied petroleum gas."

DISTRICT RESPONSE

The District disagrees. Units with a heat input rating of 75,000 to 2 million (inclusive) Btu per hour are subject to Rule 69.2.1, which does not require a Certificate of Registration or a Permit to Operate for such units. This is consistent with proposed Subsection (d)(2)(iv)(B) in Rule 11 which exempts from Permit to Operate requirements units with a heat input rating of 2 million Btu per hour or less.

RULE 12 COMMENTS

35. WORKSHOP COMMENT

Proposed Subsection (e)(1)(i) requires a Certificate of Compliance to be submitted with a completed Registration application form. Is a Certificate of Compliance required for registering an existing unit subject to proposed Rule 69.2.2 – Medium Boilers, Process Heaters, and Steam Generators?

DISTRICT RESPONSE

No. A Certificate of Compliance would be required for new units only.

36. WORKSHOP COMMENT

What are the fees required to apply for a Certificate of Registration for a grain silo?

DISTRICT RESPONSE

Based on preliminary information, the registration application fee for a grain silo is roughly estimated to be approximately $1,000, in addition to an annual renewal fee that is roughly estimated to be approximately $200. Also see District Response to Workshop Comment No. 20.

37. WORKSHOP COMMENT

What are the conditions that will be specified on a Certificate of Registration for a grain silo?

DISTRICT RESPONSE

The conditions that will be specified on a Certificate of Registration for a grain silo will include the requirements specified in proposed Subsection (d)(7), and other conditions that mirror conditions specified in a Permit to Operate for a grain silo.

AMO:RC:jlm
12/05/19

ATTACHMENT E

SOCIOECONOMIC IMPACT ASSESSMENT

PROPOSED AMENDED RULE 69.2.1 - SMALL BOILERS, PROCESS HEATERS, STEAM GENERATORS, AND LARGE WATER HEATERS

February 2020

Prepared by

San Diego County Air Pollution Control District
10124 Old Grove Road
San Diego, CA 92131

SOCIOECONOMIC IMPACT ASSESSMENT
PROPOSED AMENDED RULE 69.2.1 –
SMALL BOILERS, PROCESS HEATERS, STEAM GENERATORS, AND LARGE WATER HEATERS

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EXECUTIVE SUMMARY

The San Diego County Air Pollution Control District (District) is required by federal and State law to adopt and periodically update rules to control and reduce ozone-forming emissions from stationary sources in the San Diego region, which is an ozone nonattainment area. The District's proposal to amend Rule 69.2.1 (Small Boilers, Process Heaters, Steam Generators, and Large Water Heaters) is the result of these federal and State requirements.

Additionally, when adopting, amending or repealing a rule that will significantly affect air quality or emissions limitations, the District is required by State law to assess the socioeconomic impacts. Proposed amended Rule 69.2.1 will affect emissions limitations by establishing more stringent emissions standards for new small boilers, process heaters, steam generators, and large water heaters. Accordingly, this Socioeconomic Impact Assessment (SIA) has been prepared pursuant to State law.

Rule 69.2.1 was adopted in 2009 to control and reduce emissions of oxides of nitrogen (NOx, which is an ozone-forming pollutant) from new small boilers, process heaters, and steam generators (units) with a heat input rating of 600,000 to 2 million British thermal units (Btu) per hour. The District is now proposing to amend the rule to extend its applicability to smaller units with a heat input rating as low as 75,000 Btu per hour, and to establish more health-protective emissions limits on new and replacement units.

The proposed requirements (if adopted) will become effective on January 1, 2021, providing time for affected manufacturers and distributors to deplete their existing inventories of conventional units and transition to the new requirements. Equipment manufacturers will be required to certify their new units' compliance with all applicable rule provisions.

The proposed requirements will not affect any facility with existing units until those units are replaced or a new unit is installed. An estimated 50,900 existing units throughout the region will be affected, when they are replaced through normal attrition. Upon full implementation, the proposed amended rule will reduce NOx emissions from affected equipment by approximately 67% or 277 tons per year.

The proposed amendments to Rule 69.2.1 are very similar to regulatory requirements already in place in several other California air districts such as South Coast, San Joaquin Valley, Bay Area, and Ventura County. Consequently, the emissions control technology, low-NOx burners, is well established and compliant units are readily available. Those air districts prepared socioeconomic impact assessments when adopting their requirements and determined that industry and consumer impacts were minimal and socioeconomic impacts were not significant. District staff used those assessments as guidelines when preparing the SIA herein.

The proposed amendments to Rule 69.2.1 are not anticipated to have a significant socioeconomic impact on affected industries. The proposed emissions limits are feasible, and compliant units are currently available due to similar requirements already in place in several California air districts. While low-emitting units are more expensive than conventional ones, they are more

energy efficient and are therefore cheaper to operate, with an estimated payback over the course of the equipment useful life. The cost of low-emitting units is expected to decrease over time due to advances in technology and increased production. The proposed sell-through period will minimize potential impacts for manufacturers and distributors that are already familiar with the proposed rule requirements due to several California air districts having similar rules already in effect.

I. INTRODUCTION

California law requires air pollution control districts (with populations of 500,000 people or higher) to perform an SIA when adopting, amending, or repealing rules and regulations that will significantly affect air quality and emissions limitations.

The Health and Safety Code section 40728.5 specifies the following elements to be included in the SIA:

1. The type of industry or business, including small business, affected by the rule or regulation.

2. The impact of the rule or regulation on employment and the economy of the region affected by the adoption of the rule or regulation.

3. The range of probable costs to industry or business, including small business, of the rule or regulation.

4. The availability and cost-effectiveness of alternatives to the rule or regulation.

5. The emission reduction potential of the rule or regulation.

6. The necessity of adopting, amending, or repealing the rule or regulation in order to attain state and federal ambient air quality standards.

II. NECESSITY OF PROPOSED AMENDED RULE 69.2.1

The San Diego County Air Basin does not attain the National and State Ambient Air Quality Standards for ozone. Consequently, the federal Clean Air Act requires the District to adopt rules reflecting Reasonably Available Control Technology (RACT) for major stationary sources of ozone precursors – volatile organic compounds and oxides of nitrogen (NOx). Similarly, the California Clean Air Act requires the District to adopt all feasible measures to control and reduce ozone precursor emissions from stationary sources.

Many air districts in California have already adopted rules regulating small boilers, process heaters, steam generators, and large water heaters. The 2016 San Diego Regional Air Quality Strategy includes a measure to further reduce NOx emissions from such equipment. The proposed amendments to Rule 69.2.1 are designed to implement this measure.

III. SUMMARY OF PROPOSED AMENDED RULE 69.2.1

The proposed amended Rule 69.2.1 will:

- Not affect any facility that currently operates equipment that is subject to the proposed amended rule until that equipment is replaced or new equipment is installed.

- Lower the applicability threshold from a heat input rating of 600,000 British thermal units (Btu) per hour to 75,000 Btu per hour.

- Specify the following NOx emissions limits for new units:

    - natural gas units: 20 parts per million by volume (ppmv).
    - natural gas pool heaters with a heat input rating of 75,000 to 400,000 Btu per hour: 55 ppmv.
    - units with a heat input rating of 75,000 to 400,000 Btu per hour when operated on other fuels: 77 ppmv.
    - units with a heat input rating of greater than 400,000 to 2 million Btu per hour when operated on other fuels: 30 ppmv.

IV. TYPE OF INDUSTRIES AFFECTED BY THE PROPOSED AMENDED RULE

Proposed amended Rule 69.2.1 will affect manufacturers (SIC 3433), distributors and wholesalers (SIC 5074), and installers (SIC 1711) of boilers, process heaters, steam generators, and water heaters. These units are used by any small or large-sized facility in San Diego County that requires a supply of hot water or steam. Some examples of these establishments include food processors, hospitals, office buildings, schools, student dormitories, dry cleaners, bakeries, and motels. Most boiler manufacturers currently manufacture low-NOx units that can comply with the emissions standards of the proposed amended rule.

V. RANGE OF PROBABLE COSTS TO INDUSTRY INCLUDING SMALL BUSINESS

A variety of low-NOx units are commercially available as a result of rules adopted by the South Coast, Ventura County, San Joaquin Valley, and other California air districts. Therefore, compliance with proposed amended Rule 69.2.1 is not expected to increase costs for manufacturers to develop new technology.

There will be no immediate impact on existing businesses that presently have boilers, steam generators, process heaters, or water heaters on the premises. The rule requirements, which are effective January 1, 2021, will apply only when an existing unit is replaced or a new unit is installed.

Table 1 below shows the annualized costs of both low-NOx and standard units of different sizes for facilities that will need to replace an existing unit (through normal attrition) or install a new one. The costs of low-NOx and standard units are based on information provided to the District from various manufacturers and distributors, cost information in a California air district's staff report, and include installation expenses.[1] The annualized costs were calculated assuming 20 years of useful equipment life, 4% interest, and include operation and maintenance costs assumed at 5% of capital equipment cost.

The table shows that the difference in annualized costs is an average of about $230 per year. It should be noted that newer equipment has a higher efficiency than standard units, which will result in fuel cost savings and help offset the increase in cost of low-NOx units. Further, the cost differential is anticipated to reduce as demand for low-NOx units increases over time and per-unit manufacturing costs fall, while demand for non-complying standard units decreases and per-unit manufacturing costs rise. Therefore, proposed amended Rule 69.2.1 will not have a negative economic impact on industry including small businesses in San Diego County.

TABLE 1 – Total Annualized Costs of Units Subject to Proposed Amended Rule 69.2.1

Average Heat Input Rating (Btu/hr)	***Standard Unit Average Annualized Cost ($/yr)***	***Low-NOx Unit Average Annualized Cost ($ /yr)***	***Difference Between Low-NOx and Standard Units Annualized Cost ($/yr)***
87,500	142	225	83
150,000	285	426	141
250,000	360	610	250
350,000	505	845	340
450,000	946	1,384	438
550,000	1,095	1,545	450
650,000	1,379	1,434	55
1,000,000	1,730	1,842	112
1,500,000	1,901	2,070	169

VI. AVAILABILITY AND COST-EFFECTIVENESS OF ALTERNATIVES

There are two alternatives to the proposed amended Rule 69.2.1 – adopt a less stringent rule, or adopt a more stringent rule.

The first alternative of adopting a less stringent rule is not recommended. Other air districts in California currently have adopted rules that regulate units in the same size category and with the same emissions standards as proposed amended Rule 69.2.1. Thus, the proposed requirements are feasible and adopting less stringent requirements would be inconsistent with State law that requires the District to adopt all feasible control measures to reduce NOx emissions.

The second alternative of adopting a more stringent rule could be achieved via two options, requiring either (1) the immediate replacement of existing standard units with low-NOx units, or (2) the modification (retrofit) of existing units with low-NOx burners.

As listed in Table 2 below, the cost-effectiveness values for option #1, immediate replacement of existing units, would have poor cost-effectiveness, with costs as high as $143 for each pound of resulting emission reduction. For reference, existing District rules to control and reduce NOx emissions from stationary sources have a cost-effectiveness of up to $6 per pound of emission reduction.

Option #2, retrofit existing units with low-NOx burners, is not technologically feasible for units with a heat input rating less than 1 million Btu per hour. Moreover, even for larger units, this option has poor cost-effectiveness at more than $9 per pound of emission reduction. Therefore, the District does not recommend adopting either of the two options.

TABLE 2 – Option #1 Cost-Effectiveness – Immediate Replacement w/Low-NOx Unit

Average Heat Input Rating (Btu/hr)	***Immediate Replacement w/ Low-NOx Unit ($/lb)***
87,500	8.86
150,000	10.34
250,000	8.94
350,000	8.94
450,000	15.74
550,000	14.44
650,000	143.09
750,000	124.71
850,000	108.69
950,000	82.40
1,500,000	89.52

VII. EMISSION REDUCTION POTENTIAL OF THE PROPOSED AMENDED RULE

Existing units with a heat input rating of 75,000 to 2 million Btu per hour are currently exempt from District requirements for a permit to operate. Thus, the District does not have a comprehensive inventory of existing units operating in San Diego County within the applicable size rating. However, based on information in a boiler study, and unit population and rating distribution in other California air districts' staff reports, the total NOx emissions from an estimated 50,900 existing units subject to the proposed amended rule are approximately 416 tons per year.[2-4] Upon full implementation, when all existing units are replaced through normal attrition, the proposed amended rule will reduce NOx emissions from affected equipment by approximately 67% or 277 tons per year.

VIII. IMPACT OF THE PROPOSED AMENDED RULE ON EMPLOYMENT AND THE REGIONAL ECONOMY

The District is required by State law to incorporate every feasible measure to control ozone precursors and to attain the Ambient Air Quality Standard for ozone at the earliest practicable date. The California Air Resources Board interprets "every feasible measure" to mean that, at a minimum, a district follows similar regulations that have been successfully implemented elsewhere. Various air districts in California have already demonstrated feasibility through the adoption of rules that are similar to the proposed amended rule. For example, the South Coast Air Quality Management District Rule 1146.2 emissions standards have applied to the type of equipment that would be subject to proposed amended Rule 69.2.1 since 2012.

The proposed amended rule will require retail establishments and contractors to distribute, sell or install units with low-NOx burners. It is a point-of-sale rule in which new, low-NOx units will replace existing higher emission units gradually over time through normal attrition. The proposed amended rule will become effective on January 1, 2021, providing time for affected manufacturers and distributors to deplete their existing inventories of standard units and transition to the new requirements.

As noted previously, while low-NOx units are typically more expensive than standard units, it is anticipated that equipment costs will decrease over time due to advances in technology and increase in demand for lower emission units, and thus, combined with fuel cost savings relative to standard units, the economic impact on the equipment users will be minimal.

In its socioeconomic impact assessment of Rule 74.11.1, the Ventura County Air Pollution Control District concluded that the impact of the rule was expected to have no impact on employment and the regional economy, as new low-NOx units replaced obsolete standard units gradually over time.[3] It is reasonable to assume that a similar conclusion can be made as a result of adoption of proposed amended Rule 69.2.1, considering that complying equipment is widely available and the cost differential will not significantly affect businesses in San Diego County.

IX. CONCLUSION

The proposed amendments to Rule 69.2.1 are not anticipated to have a significant socioeconomic impact on affected industries. The proposed emissions limits are feasible and compliant units are currently available due to similar requirements already in place in other California air districts. While low-emitting units are more expensive than standard units, they are more energy efficient and are therefore cheaper to operate, with an estimated payback over the course of the equipment useful life. The cost of low-emitting units is expected to decrease over time due to advances in technology and increased production. The proposed sell-through period will minimize potential impacts for manufacturers and distributors that are already familiar with the proposed rule requirements due to several California air districts having similar rules already in effect.

References

1. Santa Barbara County Air Pollution Control District, Rule 360 Staff Report, February 2018
2. IOU CASE Report: Pool Heaters, July 29, 2013
3. Ventura County Air Pollution Control District, Rule 74.11.1 Staff Report, May 2012
4. San Joaquin Valley Air Pollution Control District, Rule 4308 Staff Report, November 2009

RULE 69.2.1 SMALL BOILERS, PROCESS HEATERS, ~~AND~~ STEAM GENERATORS, AND LARGE WATER HEATERS (Adopted ~~March 25, 2009~~ *(date of adoption)*; Effective ~~March 25, 2010~~ ~~*January*~~ *July* 1, 2021)

(a) **APPLICABILITY**

Except as otherwise provided in Section (b), this rule shall apply to any person who manufactures, sells, offers for sale or distributes for use within San Diego County, or installs within San Diego County a new unit (boiler, process heater, ~~or~~ steam generator, or water heater) with a heat input rating from ~~600,000~~ 75,000 Btu per hour to 2 million Btu per hour.

(b) **EXEMPTIONS**

(1) The provisions of this rule shall not apply to the following:

(i) Any waste heat recovery boilers that are used to recover heat from the exhaust of gas turbines, internal combustion engines, or other combustion equipment.

(ii) Furnaces, kilns, and any combustion equipment where the material being heated is in direct contact with the products of combustion.

(iii) Thermal oxidizers and associated waste heat recovery equipment.

~~(iv) Units with a heat input rating from 75,000 Btu per hour to 400,000 Btu per hour that operate exclusively to heat residential swimming pools and hot tubs.~~

(~~v~~iv) Hot water pressure washers.

~~(vi) Dual-fueled units.~~

~~(vii) Existing or relocated units.~~

~~(2) The provisions of Sections (e) and (f) shall not apply to new units with a heat input rating from 75,000 Btu per hour to less than 1,000,000 Btu per hour that operate primarily on non PUC-quality natural gas or liquid fuel.~~

(c) **DEFINITIONS**

For the purposes of this rule, the following definitions shall apply:

(1) **"Boiler" ~~or "Steam Generator"~~** means any combustion equipment fired with gaseous and/or liquid fuel and used to produce steam or to heat water.

(2) **"Btu"** means British thermal unit.

~~(3) **"Dual-Fueled Unit"** means any unit designed to operate primarily on natural gas and other fuel as backup.~~

~~(4) **"Existing Unit"** means any unit which was installed and capable of operation before January 1, 2021.~~

(~~3~~5~~3~~) **"Furnace"** means any enclosed structure in which heat is produced by the combustion of any fuel.

(~~4~~6~~4~~) **"Gaseous Fuel"** means natural gas or liquefied petroleum gas.

(~~5~~7~~5~~) **"Heat Input Rating"** means the maximum steady state heat input capacity of a unit, in Btu per hour, as specified by the manufacturer.

(~~8~~6) **"Hot Water Pressure Washer"** means a high-pressure cleaning machine in which the hot water discharge line (spray nozzle) is hand supported and is intended for commercial and industrial applications.

(~~9~~7) **"Installed"** means a unit is located onsite at the final destination and is capable of operation.

(~~10~~8) **"Instantaneous Water Heater"** means a water heater that heats water only when it flows through a heat exchanger.

(~~6~~11~~9~~) **"Kiln"** means an oven, furnace, or heated enclosure used for processing a substance by burning, firing, or drying.

(~~7~~12~~10~~) **"Liquefied Petroleum Gas (LPG)"** means a gas, consisting primarily of propane, propylene, butane, and butylene in various mixtures, that is stored as a liquid at high pressure.

(~~8~~13~~11~~) **"Liquid Fuel"** means any fuel which is a liquid at standard conditions, including distillate oils.

(~~9~~14~~12~~) **"New Unit"** means a unit installed, manufactured, or sold on or after ~~March 25, 2010 January~~ July 1, 2021.

(~~10~~15~~13~~) **"Process Heater"** means any combustion equipment fired with liquid and/or gaseous fuel and which transfers heat from the combustion gases to water or process streams. Pool ~~H~~heaters used for swimming pools, spas and/or therapy pools shall be considered process heaters.

(~~16~~14) **"PUC Quality Natural Gas"** means California Public Utility Commission Quality Natural Gas that is any gaseous fuel, gas-containing fuel where the sulfur content is no more than one-fourth (0.25) grain of hydrogen sulfide per one hundred (100) standard cubic feet and no more than five (5) grains of total sulfur per one hundred (100) standard

cubic feet. PUC quality natural gas also means high methane gas of at least 80% methane by volume.

(~~17~~) ~~**"Relocated Unit"** means an existing unit which is moved within San Diego County from one stationary source to another stationary source. A relocated unit is deemed to maintain the status of an existing unit at the subsequent stationary source.~~

(~~18~~15) **"Stationary Source"** means the same as defined in Rule 2 - Definitions.

(~~19~~16) **"Steam Generator"** means any combustion equipment fired with gaseous and/or liquid fuel and used to produce steam or to heat water.

(~~20~~17) **"Tank Type Water Heater"** means a water heater with an integral closed vessel in which water is heated and stored for use external to the vessel.

(~~11~~~~21~~18) **"Thermal Oxidizer"** means combustion equipment fired with gaseous fuel and used to control emissions of air contaminants from industrial or commercial processes.

(~~12~~~~22~~19) **"Unit"** means any boiler, steam generator, ~~or~~ process heater, or water heater.

(~~23~~20) **"Water Heater"** means a closed vessel in which water heated by combustion of natural gas is withdrawn for use external to the vessel at pressures not exceeding 160 psig. Water heater consists of the apparatus by which heat is generated and all controls and devices necessary to prevent water temperatures from exceeding 210°F (99°C). Types of water heaters include instantaneous and tank type water heaters.

(d) **STANDARDS**

Except as otherwise provided in Section (b), effective ~~March 25, 2010 January~~ July 1, 2021, no person shall manufacture, distribute, sell, offer for sale, or install within San Diego County any new unit that has emissions that exceed the following levels:

~~(1) Emissions of oxides of nitrogen, calculated as nitrogen dioxide at 3% oxygen on a dry basis, that exceed the following levels:~~

~~(i) 30 parts per million by volume when operated on a gaseous fuel as a primary fuel.~~

~~(ii) 40 parts per million by volume when operated on a liquid fuel as a primary fuel.~~

~~(2) Emissions of carbon monoxide, calculated at 3% oxygen on a dry basis, that exceed 400 parts per million by volume.~~

Equipment Type	Fuel	Heat Input Rating (Btu per hour)	Concentration of NOx[1] (ppmv)	Concentration of CO[2] (ppmv)
New unit	Natural gas	75,000 to 400,000	20	N/A
New pool heater	Natural gas	75,000 to 400,000	55	N/A
New unit	Natural gas	Greater than 400,000 to 2,000,000	20	400
New unit	Non PUC Gas or Liquid fuel	75,000 to 400,000	77	N/A
New unit	Non PUC Gas or Liquid fuel	Greater than 400,000 to 2,000,000	30	400

[1]Calculated as nitrogen dioxide at 3% oxygen on a dry basis.
[2]Calculated as carbon monoxide at 3% oxygen on a dry basis.

(e) **CERTIFICATION STATEMENT**

(1) A manufacturer of any new unit to be offered for sale within San Diego County shall submit to the Air Pollution Control Officer a statement certifying that each model of boiler, process heater, ~~or~~ steam generator, or water heater subject to the requirements of Section (d) ~~of this rule~~ complies with the provisions of this rule.

(i) The statement shall be signed, dated, and attested to the accuracy of all information by a representative of the manufacturer.

(ii) The statement shall be submitted at least 30 days before the unit model is offered for sale, sold, or installed within San Diego County.

(iii) The statement shall include:

(A) Name and address of manufacturer,

(~~A~~B) Brand name,

(~~B~~C) Model number,

(D) Description of the model unit being certified, including burner type,

(~~C~~E) Heat input rating as specified on the nameplate, and

(~~D~~F) Oxides of nitrogen and carbon monoxide emission test results of each model being certified.

(2) A manufacturer shall submit to the Air Pollution Control Officer a new certification statement for any unit model whose design is changed in any manner which may alter oxides of nitrogen or carbon monoxide emissions.

(3) Alternatively, to comply with Subsections (e)(1) or (e)(2), a manufacturer may submit to the Air Pollution Control Officer a certification statement for the unit model as required in the South Coast Air Quality Management District (SCAQMD) Rule 1146.2, Section (d) – Certification.

(f) **LABELING**

A manufacturer shall display on the shipping carton and the nameplate of every unit to be offered for sale within San Diego County, the model number and certification status of the unit complying with Section (e) ~~of this rule~~, or alternatively, the most current requirements of the SCAQMD Rule 1146.2.

(g) **RECORD KEEPING**

A manufacturer shall keep test records for oxides of nitrogen and carbon monoxide emissions and certification records for as long as the new unit model is offered for sale or sold within San Diego County, or for three calendar years after date of manufacture, whichever is longer. Such records shall be provided to the ~~San Diego County Air Pollution Control~~ District upon request.

(h) **TEST METHODS**

~~To determine compliance with Section (d) of this rule, the manufacturer shall obtain measurements of oxides of nitrogen and carbon monoxide contents conducted by an independent testing laboratory in accordance with:~~

~~(1) San Diego County Air Pollution Control District Test Method 100 as approved by the federal Environmental Protection Agency, or~~

~~(2) SCAQMD Test Method 100.1 as approved by the federal Environmental Protection Agency~~.

When more than one test method or set of test methods are specified in this Section, a violation of any requirement of this rule established by any one of the specified test methods or set of test methods shall constitute a violation of this rule.

(1) To determine compliance with Section (d), the manufacturer shall obtain measurements of oxides of nitrogen and carbon monoxide contents conducted by an independent testing laboratory in accordance with:

(i) San Diego County Air Pollution Control District Test Method 100, Test Procedures for the Determination of Nitrogen Oxides, Carbon Monoxide and Diluent Gases by Continuous Emission Monitoring, May 1995, or its most current version approved by the U.S. Environmental Protection Agency (EPA), or

(ii) SCAQMD Test Method 100.1, Instrumental Analyzer Procedures for Continuous Gaseous Emission Sampling, March 1989, or its most current version approved by EPA.

(2) For natural gas-fired units, emission tests shall be performed in accordance with the procedures and methods outlined in the SCAQMD Protocol: Nitrogen Oxides Emissions Compliance Testing for Natural Gas-Fired Water Heaters and Small Boilers, January 1998.

(3) Other test methods which are determined to be equivalent to the test methods specified in this rule and approved, in writing, by the Air Pollution Control Officer, California Air Resources Board and EPA.