



**COUNTY OF SAN DIEGO**  
**AIR POLLUTION CONTROL DISTRICT**

**BOARD OF SUPERVISORS**

GREG COX  
First District

DIANNE JACOB  
Second District

PAM SLATER-PRICE  
Third District

RON ROBERTS  
Fourth District

BILL HORN  
Fifth District

**DATE:** March 25, 2009

**TO:** San Diego County Air Pollution Control Board

**SUBJECT:** ADOPTION OF NEW RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, AND STEAM GENERATORS (District: All)

**SUMMARY:**

**Overview**

Adoption by the Air Pollution Control Board is requested for proposed new Rule 69.2.1, regulating emissions of oxides of nitrogen from new and replacement small boilers, process heaters, and steam generators. Nitrogen oxides emitted to the atmosphere as a result of fuel combustion in this equipment play a role in ozone formation. San Diego County does not yet attain State and federal air quality standards for ozone, a major component of smog.

The emissions control technology for the equipment affected by this rule is well established and the proposed rule provisions are similar to existing regulatory requirements in several other California air districts. Proposed new Rule 69.2.1 applies to manufacturers, sellers, distributors, or installers of affected equipment. It will prohibit the sale, distribution, or installation of any unit that does not comply with the proposed emission limits and requires equipment manufacturers to certify the unit's compliance with all applicable rule provisions. The proposed rule will not affect existing equipment.

Upon full implementation, the rule will reduce emissions of nitrogen oxides from affected equipment by approximately 73%, or 65 tons per year. It will help fulfill State requirements to implement all feasible control measures to achieve the ambient air quality standards for ozone.

**Recommendation(s)**

**CHIEF ADMINISTRATIVE OFFICER**

1. Find that the adoption of Rule 69.2.1 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.
2. Adopt the resolution entitled Resolution Adopting Rule 69.2.1 into Regulation IV of the Rules and Regulations of the San Diego County Air Pollution Control

**SUBJECT:** NEW RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, AND STEAM GENERATORS (District: All)

District.

**Fiscal Impact**

The proposed new Rule 69.2.1 will not have a significant fiscal impact on the Air Pollution Control District. The rule will be enforced with existing District staff.

**Business Impact Statement**

Adopting Rule 69.2.1 will not adversely impact the business community. Combustion equipment complying with the proposed rule is currently readily available in California. The rule will not affect any facility that currently operates such equipment in San Diego County until the equipment is replaced or new equipment is installed. Low-emitting units are more energy-efficient and their cost is expected to decrease over time due to advances in technology and increasing demand.

**Advisory Board Statement**

There was no quorum at the Air Pollution Control Advisory Committee meeting on January 14, 2009, but the members present recommended adopting the proposed rule.

**BACKGROUND:**

San Diego County currently does not meet the National and State Ambient Air Quality Standards for ozone and is classified as an ozone nonattainment area. Both federal and State laws require the San Diego County Air Pollution Control District (District) to implement rules that regulate emissions of ozone precursors - volatile organic compounds and oxides of nitrogen (NO<sub>x</sub>).

Proposed new Rule 69.2.1 will control NO<sub>x</sub> emissions from small combustion units, such as boilers, process heaters, and steam generators. Rule 69.2.1 will also help fulfill State requirements to implement all feasible control measures that reduce NO<sub>x</sub> emissions. The proposed rule emission standards are similar to existing regulatory requirements in several other California air districts, including South Coast, San Joaquin Valley, Bay Area, and Ventura County, among others, and the emission control technology such as low-NO<sub>x</sub> burners is widely available.

New Rule 69.2.1 will prohibit the manufacture, sale, offer for sale, or installation within San Diego County of any small boiler, process heater, or steam generator that does not comply with the specified emission standards. It will require the manufacturer of any unit offered for sale within San Diego County to submit to the District a statement certifying that each model of boiler, process heater, or steam generator complies with all applicable provisions of the rule. A certification statement approved by the South Coast Air Quality Management District may be submitted to avoid duplicative testing and certification costs. The manufacturer must also display on the shipping carton and the nameplate of such a unit the model number and certification status showing that it complies with the proposed Rule 69.2.1, or the South Coast Air Quality Management District Rule 1146.2. All emission test records and certification records must be kept by the equipment manufacturer for as long as the unit model is offered for sale or sold within San Diego County, or for three calendar years after manufacture, whichever is longer.

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Proposed new Rule 69.2.1 will become effective one year after the date of adoption to allow for depletion of existing inventories of combustion equipment. It will not affect any facility that currently operates any unit subject to the new requirements until the unit is replaced or a new unit is installed.

When fully implemented, Rule 69.2.1 will affect approximately 800 combustion units and reduce NOx emissions from those units by 65 tons/year (73%). The estimated cost effectiveness ranges from \$4 to \$6 per pound of NOx reduced, depending on the size of the new unit.

On October 7, 2008, the District held a public workshop to discuss and receive comments on the proposed amended rule. No significant issues were raised.

### **Compliance with Board Policy on Adopting New Rules**

On February 2, 1993 (APCB #2), the Board directed that, with the exception of a regulation requested by business or a regulation for which a socioeconomic impact assessment is not required, no new or revised regulation shall be implemented unless specifically required by federal or State law. Proposed new Rule 69.2.1 is required by State law, which calls for adoption of every feasible control measure to accelerate progress toward achieving the ambient air quality standard for ozone. Therefore, implementation of the proposed rule is consistent with the Board directive.

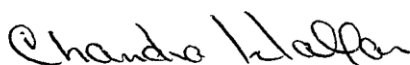
### **Environmental Statement**

The California Environmental Quality Act (CEQA) requires environmental review for certain actions. The District conducted a preliminary review of whether CEQA applies to the adoption of Rule 69.2.1. Proposed new Rule 69.2.1 is required by State law, which calls for adoption of every feasible control measure to accelerate progress toward achieving the ambient air quality standard for ozone. Rule 69.2.1 will protect the environment by promoting significant reductions in NOx emissions. Therefore, the adoption of Rule 69.2.1 is exempt from the provisions of CEQA pursuant to California Code of Regulations, title 14, Section 15308.

### **Linkage to the County of San Diego's Strategic Plan**

The County's five-year strategic plan includes an Environment Initiative to ensure environmental preservation and enhance quality of life. Proposed new Rule 69.2.1 will provide a significant reduction of emissions without negatively impacting the local business community. The rule balances air quality preservation, public health protection, and economic development needs.

Respectfully submitted,



CHANDRA L. WALLAR  
Deputy Chief Administrative Officer



ROBERT KARD  
Air Pollution Control Officer

**SUBJECT:** NEW RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, AND  
STEAM GENERATORS (District: All)

**ATTACHMENT(S)**

Attachment A – Resolution adopting new Rule 69.2.1 in Regulation IV of the Rules and  
Regulations of the San Diego County Air Pollution Control District.

Attachment B – Socioeconomic Impact Assessment

Attachment C – Comparative Analysis

Attachment D – Incremental Cost effectiveness

Attachment E – Workshop Report

**SUBJECT:** NEW RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, AND STEAM GENERATORS (District: All)

**AGENDA ITEM INFORMATION SHEET**

**CONCURRENCE(S)**

<b>COUNTY COUNSEL REVIEW</b>	<input checked="" type="checkbox"/> Yes	
Written disclosure per County Charter §1000.1 required?	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>GROUP/AGENCY FINANCE DIRECTOR</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> N/A
<b>CHIEF FINANCIAL OFFICER</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> N/A
Requires Four Votes	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<b>GROUP/AGENCY INFORMATION TECHNOLOGY DIRECTOR</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> N/A
<b>COUNTY TECHNOLOGY OFFICE</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> N/A
<b>DEPARTMENT OF HUMAN RESOURCES</b>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> N/A
<b>Other Concurrence(s):</b>	N/A	

**ORIGINATING DEPARTMENT:** Air Pollution Control District, County of San Diego

**CONTACT PERSON(S):**

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**AUTHORIZED REPRESENTATIVE:** \_\_\_\_\_

**ROBERT J. KARD**  
Air Pollution Control Officer

**SUBJECT:** NEW RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS, AND  
STEAM GENERATORS (District: All)

**AGENDA ITEM INFORMATION SHEET**  
(continued)

**PREVIOUS RELEVANT BOARD ACTIONS:**

N/A

**BOARD POLICIES APPLICABLE:**

N/A

**BOARD POLICY STATEMENTS:**

N/A

**CONTRACT AND/OR REQUISITION NUMBER(S):**

N/A

Re: Rules and Regulations of the)  
Air Pollution Control District . . . )  
of San Diego County . . . . . )

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

On motion of Member Roberts, seconded by Member Horn, the following resolution is adopted:

**WHEREAS**, the San Diego County Air Pollution Control 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

**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 new Rule 69.2.1 is necessary in order to implement all feasible measures to achieve the ambient air quality standards for ozone by further reducing emissions of oxides of nitrogen in the County of San Diego;
- (2) (Authority) The adoption of proposed new Rule 69.2.1 is authorized by Health and Safety Code section 40702;
- (3) (Clarity) The proposed new Rule 69.2.1 can be easily understood by persons directly affected by it;
- (4) (Consistency) The adoption of proposed new 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 new Rule 69.2.1 will not duplicate existing District or federal requirements;

- (6) (Reference) The adoption of proposed new Rule 69.2.1 is necessary to comply with the State law, California Health and Safety Code Section 40914(b)(2), that requires adoption of every feasible control measure to reduce ozone precursor emissions;

**WHEREAS**, the Air Pollution Control Board further finds pursuant to Health and Safety Code section 40001 that proposed new Rule 69.2.1 will facilitate the attainment of ambient air quality standards; and

**WHEREAS**, the Air Pollution Control Board further finds that an assessment of socioeconomic impacts of the proposed new Rule 69.2.1, as required by Section 40728.5 of the State 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 new rule have been actively considered and the proposed new rule will not have adverse socioeconomic impacts; and

**WHEREAS**, the Air Pollution Control Board further finds that there are no requirements of federal and local air pollution control regulations that apply to the same sources as Rule 69.2.1 and that the comparative analysis pursuant to the State Health and Safety Code Section 40727.2 has been prepared; and

**WHEREAS**, the Air Pollution Control Board further finds that the incremental cost-effectiveness analysis pursuant to the State Health and Safety Code Section 40920.6(a) is not applicable to proposed new Rule 69.2.1.

**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 new Rule 69.2.1 is to read as follows:

**RULE 69.2.1 SMALL BOILERS, PROCESS HEATERS, AND STEAM GENERATORS** (Adopted *(date of adoption)*; Effective *(one year from date of adoption)*)

(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) with a heat input rating from 600,000 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.

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

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

(9) **"New Unit"** means a unit installed, manufactured, or sold on or after *(one year after date of adoption)*.

(10) **"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. Heaters used for swimming pools, spas and/or therapy pools shall be considered process heaters.

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

(12) "Unit" means any boiler, steam generator, or process heater.

**(d) STANDARDS**

Except as otherwise provided in Section (b), effective *(one year after date of adoption)*, no person shall manufacture, distribute, sell, offer for sale, or install within San Diego County any new unit that has:

(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.

**(e) CERTIFICATION STATEMENT**

(1) A manufacturer of any 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 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) Brand name,

(B) Model number,

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

(D) 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).

(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) **RECORDKEEPING**

A manufacturer shall keep test records for oxides of nitrogen and carbon monoxide emissions and certification records for as long as the 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.

**IT IS FURTHER RESOLVED AND ORDERED** that Rule 69.2.1 of Regulation IV shall take effect 12 months from date of adoption.

**PASSED AND ADOPTED** by the Air Pollution Control Board of the San Diego County Air Pollution Control District, State of California, this 25th day of March, 2009, by the following votes:

**AYES: Cox, Jacob, Slater-Price, Roberts, Horn**

APPROVED AS TO FORM AND LEGALITY  
COUNTY COUNSEL

BY   
\_\_\_\_\_  
SENIOR DEPUTY

STATE OF CALIFORNIA)  
County of San Diego)<sup>SS</sup>

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

THOMAS J. PASTUSZKA  
Clerk of the Air Pollution Control Board

By: Catherine Santos  
Catherine Santos, Deputy



Resolution No. 09-047  
Meeting date: 3/25/09 (AP1)

**SOCIOECONOMIC IMPACT ASSESSMENT**

**PROPOSED NEW RULE 69.2.1 -  
SMALL BOILERS, PROCESS HEATERS, AND STEAM GENERATORS  
600,000 BTU/HR TO 2,000,000 BTU/HR**

**December 2008**

**Prepared by**

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

**SOCIOECONOMIC IMPACT ASSESSMENT  
PROPOSED NEW RULE 69.2.1 –  
SMALL BOILERS, PROCESS HEATERS, AND STEAM GENERATORS**

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## EXECUTIVE SUMMARY

This report represents the results of a socioeconomic impact assessment (SIA) of the San Diego County Air Pollution Control District's (District) proposed new Rule 69.2.1 - Small Boilers, Process Heaters, and Steam Generators. The proposed rule will help fulfill the District's commitment in the San Diego Regional Air Quality Strategy to implement all feasible control measures as required by State law.

The proposed rule applies to anyone who manufactures, sells, offers for sale, distributes for use, or installs within San Diego County any new unit (boiler, process heater or steam generator) with a heat input rating from 600,000 Btu/hr to 2 million Btu/hr. Rule 69.2.1 is a point of sale rule that requires certification, labeling and recordkeeping by the manufacturers, and does not require affected sources to obtain a Permit to Operate with the District.

The proposed rule will affect an estimated 800 existing units in San Diego County when these units reach the end of their useful equipment lives and are replaced, or when a new unit is installed on or after the effective date of the rule. Upon full implementation, the rule is expected to reduce total oxides of nitrogen (NO<sub>x</sub>) emissions from all affected units in San Diego County by approximately 73%, or 65 tons per year.

The annualized costs for low-NO<sub>x</sub> units, on a per unit basis, are approximately \$400 to \$1,400 higher than the annualized costs for standard noncompliant units. The rule cost-effectiveness is \$4 to \$6 per pound of NO<sub>x</sub> reduced, depending on the heat input rating of the unit.

The proposed rule is not anticipated to have a significant socioeconomic impact on affected industries. The SIA herein demonstrates that the emission limits in the rule are feasible considering the commercial availability of compliant units. This availability is due to similar existing rules regulating the sale of units in other California air districts, especially in the adjacent South Coast Air Quality Management District.



## **I. INTRODUCTION**

California law requires air pollution control districts (excluding those with populations of less than 500,000 people) to perform a socioeconomic impact assessment (SIA) when adopting, amending, or repealing rules and regulations that will significantly affect air quality and emission limitations.

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

1. The necessity of adopting, amending, or repealing the rule or regulation in order to attain State and federal ambient air quality standards.
2. The type of business, including small business, affected by the rule or regulation.
3. The range of probable costs, including costs to industry or business, including small business, of the rule or regulation.
4. The emission reduction potential of the rule or regulation.
5. The impact of the rule or regulation on employment and the economy of the region affected by the adoption of the rule or regulation.
6. The availability and cost-effectiveness of alternatives to the rule or regulation.

This report presents the results of a socioeconomic impact assessment of San Diego Air Pollution Control District's (District) proposed new Rule 69.2.1 (Small Boilers, Process Heaters, and Steam Generators). Consistent with existing requirements of several other air districts, the proposed new rule will impose emission limits for applicable combustion equipment.

## **II. NECESSITY OF PROPOSED NEW RULE 69.2.1**

San Diego County Air Basin does not attain the National and State Ambient Air Quality Standards for ozone. Both federal and State laws require the District to implement rules that control emissions of ozone precursors -- volatile organic compounds and oxides of nitrogen (NO<sub>x</sub>).

State law requires air districts in nonattainment areas to provide a plan incorporating every feasible measure to control ozone precursors and to attain the Ambient Air Quality Standard for ozone at the earliest practicable date. Many air districts in California have already adopted rules regulating small boilers, process heaters, and steam generators. The San Diego Regional Air Quality Strategy includes the adoption of proposed new Rule 69.2.1 as a feasible measure to control NO<sub>x</sub> emissions from the aforementioned equipment.

### **III. SUMMARY OF PROPOSED NEW RULE 69.2.1**

The new proposed rule will:

- Provide a definition of a new unit (boiler, process heater, or steam generator) based on the date of adoption of Rule 69.2.1 by the Air Pollution Control Board.
- Specify a NOx emissions limit of 30 parts per million (ppmv) for new units when operated on gaseous fuel and of 40 ppmv when operated on liquid fuel.
- Prohibit the manufacture, sale, offer for sale, distribution for use, or installation, within San Diego County, of any new unit with a heat input rating from 600,000 Btu/hr to 2,000,000 Btu/hr that does not comply with the emissions standards of the rule.
- Require a manufacturer of any unit to be offered for sale within San Diego County, to submit to the District a statement certifying that each model of boiler, process heater, or steam generator complies with the provisions of the rule.
- Require a manufacturer to 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 in compliance with the requirements of the rule, or alternatively, with the most current requirements of the South Coast Air Quality Management District Rule 1146.2.
- Require a manufacturer to keep emissions test records and certification records for as long as the unit model is offered for sale or sold within San Diego County, or for three calendar years after manufacture, whichever is longer.
- Provide the affected entities a one-year period after the date of adoption of Rule 69.2.1 to comply with all the applicable requirements.

### **IV. TYPE OF INDUSTRIES AFFECTED BY NEW RULE 69.2.1**

New Rule 69.2.1 will affect manufacturers (SIC 3433), distributors and wholesalers (SIC 5074), and installers (SIC 1711) of boilers, process heaters, and steam generators. These units are used by any large or small-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 rule.

## **V. ESTIMATED EMISSIONS IN SAN DIEGO COUNTY AFFECTED BY THE PROPOSED NEW RULE**

Existing units rated 600,000 Btu/hr to 2 MMBtu/hr 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 natural gas fuel usage,<sup>1</sup> information in various boiler studies<sup>2,3</sup> and unit rating distribution in a boiler database,<sup>4</sup> the total NOx emissions from approximately 800 existing units rated 600,000 Btu/hr to 2 MMBtu/hr are estimated to be 89 tons per year.

## **VI. EMISSION REDUCTION POTENTIAL AND COST-EFFECTIVENESS OF THE PROPOSED NEW RULE**

Low-NOx units that comply with the proposed emission standards of the rule are currently widely available on the market. This availability is due to similar rules that have already been adopted by other air districts. Full implementation of Rule 69.2.1 is expected to reduce annual NOx emissions by approximately 65 tons per year, or 73% of the original uncontrolled emission level, with the cost-effectiveness between \$4 and \$6 per pound of NOx reduced, depending on the heat input rating of the unit (see also Table 2 below).

## **VII. RANGE OF PROBABLE COSTS TO INDUSTRY INCLUDING SMALL BUSINESS**

A variety of low-NOx units are now 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 new 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, or process heaters on the premises. The rule requirements, which are effective one year after the date of adoption, will apply only when a current unit is replaced or a new unit is installed.

However, the current average cost of a low-NOx unit is in general higher than the cost of conventional equipment (presently, up to 39% higher for larger equipment). Table 1 below shows the annualized cost of low-NOx and conventional units of different sizes for facilities that will need to replace an old unit or install a new one. The costs of low-NOx units are based on information provided to the District from various manufacturers and include installation expenses. The annualized costs were calculated assuming 20 years of useful equipment life, 10% interest, and include operation and maintenance costs, which are assumed at 5% of capital equipment cost.

The table shows that the difference in annualized costs is very low for small units. While costs are currently higher for the larger units, it is reasonable to assume that they will be purchased by larger establishments, and therefore, the additional expenses will not have a detrimental effect. It should also be noted that newer equipment has a higher efficiency than conventional 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 conventional units decreases and per-unit manufacturing costs rise. Therefore, proposed new Rule 69.2.1 will not have a negative economic impact on industry including small business in San Diego County.

**TABLE 1 – Total Installed and Annualized Costs of Combustion Units Subject to Proposed Rule 69.2.1**

<i>Size Range of Units Heat Input Rating (Btu/hr)</i>	<i>Low-NOx Unit Average Installed Cost (\$)</i>	<i>Noncompliant Unit Average Installed Cost (\$)</i>	<i>Low-NOx Unit Average Annualized Cost (\$ /yr)</i>	<i>Noncompliant Unit Average Annualized Cost (\$/yr)</i>	<i>Difference Between Low-NOx and Noncompliant Units Annualized Cost (\$/yr)</i>
>600k - 700k	14,100	11,700	2,100	1,700	400
>700k - 800k	12,300	11,300	1,800	1,700	100
>800k - 900k	23,700	14,100	3,500	2,100	1,400
>900k - 1MM	23,600	16,300	3,500	2,400	1,100
>1 - 2MM	29,000	23,700	4,300	3,500	800

**VIII. IMPACT OF THE PROPOSED NEW 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 follow 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 Rule 69.2.1. For example, the South Coast Air Quality Management District Rule 1146.2 emission standards have applied to the type of equipment that would be subject to Rule 69.2.1 since early 2000.

The proposed 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. The rule will provide a one year sell-through period for conventional noncompliant units currently in business inventories to be sold or installed before new compliant low-NOx units are required. Therefore, the rule will not have a negative impact on manufacturers or distributors of this equipment.

As noted previously, while low-NOx units are typically more expensive than standard noncompliant 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 conventional units, the economic impact on the equipment users will be minimal.

In its SIA of Rule 1146.2,<sup>5</sup> the South Coast Air Quality Management District concluded that the impact of the rule on employment and the regional economy was not significant, and that the local economy would be somewhat stimulated by additional spending on the new equipment. It is reasonable to assume that a similar conclusion can be made as a result of adoption of new 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. AVAILABILITY AND COST-EFFECTIVENESS OF ALTERNATIVES**

There are mainly two possible alternatives for the proposed new 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 a reasonable alternative. Other air districts in California currently have adopted rules that regulate units in the same size category as Rule 69.2.1. Thus, a less stringent rule would be inconsistent with State law that requires the District to adopt all feasible control strategies to reduce NO<sub>x</sub> emissions.

The second alternative of adopting a more stringent rule can be achieved with several options. These options include: 1) lower the applicability threshold to units rated less than 600,000 Btu/hr input; 2) require immediate replacement of existing noncompliant units with low-NO<sub>x</sub> units; and, 3) retrofit existing units with low-NO<sub>x</sub> burners.

As listed in Tables 2 and 3 below, the cost-effectiveness values for Options #1 and #2, applicability less than 600,000 Btu/hr and immediate replacement of existing units, exceed the District's rule development cost-effectiveness guideline of \$6.00 per pound of NO<sub>x</sub> reduced.

Option #3, retrofit with low-NO<sub>x</sub> burners, is only technologically feasible for units with the heat input larger than 1 MMBtu/hr. However, even for larger units this option is not cost-effective at more than \$9.00/lb of NO<sub>x</sub> reduced. Therefore, the District does not recommend adopting a rule more stringent than the proposed Rule 69.2.1.

**TABLE 2 – Option #1 Cost-Effectiveness – Lower Applicability Threshold**

<i>Size Range of Units Heat Input Rating (Btu/hr)</i>	<i>Avg. Heat Input Rating (MMBtu/hr)</i>	<i>Future Replacement w/Low-NOx Unit (\$/lb)</i>
<b>75k – 400k</b>	<b>0.2 – 0.4</b>	<b>13 - 21</b>
<b>&gt;400k - 500k</b>	<b>0.45</b>	<b>11.40</b>
<b>&gt;500k - 600k</b>	<b>0.55</b>	<b>6.95</b>
>600k - 700k	0.60	5.75
>700k - 800k	0.75	3.64
>800k - 900k	0.85	4.26
>900k - 1MM	0.95	4.33
>1 - 2MM	1.5	3.95

**NOTE:**

The cost-effectiveness values shown above in bold are for units rated less than 600,000 Btu/hr and are higher than \$6.00 per pound of NOx reduced.

**TABLE 3 – Option #2 Cost-Effectiveness – Immediate Replacement w/Low-NOx Unit**

<i>Size Range of Units Heat Input Rating (Btu/hr)</i>	<i>Avg. Heat Input Rating (MMBtu/hr)</i>	<i>Immediate Replacement w/ Low-NOx Unit (\$/lb)</i>
75k - 400k	0.2 – 0.4	48 - 58
>400k - 500k	0.45	37.13
>500k - 600k	0.55	29.34
>600k - 700k	0.60	25.67
>700k - 800k	0.75	17.59
>800k - 900k	0.85	30.72
>900k - 1MM	0.95	27.16
>1 - 2MM	1.5	20.90

**X. CONCLUSION**

Proposed new Rule 69.2.1 will not negatively impact affected industries, including small businesses. It will not affect employment or the economy of San Diego County, but will bring considerable environmental benefits by reducing emissions of NOx that are precursors of ground level ozone, a major component of photochemical smog.

## References

1. San Diego Gas and Electric (SDG&E) natural gas usage data, 2006, received from California Energy Commission (CEC).
2. California Industrial Energy Efficiency Market Characterization Study, Final Report, Pacific Gas and Electric, December 2001.
3. California Commercial End-Use Survey, Chapter 11, CEC, March 2006
4. SDG&E boiler and water heater database, 2005.
5. South Coast Air Quality Management District, Socioeconomic Impact Assessment for Rule 1146.2, Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers and Process Heaters, 1997.

**COMPARATIVE ANALYSIS**

**RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS  
AND STEAM GENERATORS  
600,000 BTU/HR TO 2,000,000 BTU/HR**

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 new 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.

ANALYSIS

Federal regulations for steam generating units operating on gaseous or nongaseous fuel are applicable to units with heat input rating of 10 MMBtu/hr or more and thus do not apply to combustion equipment with a heat input rating from 600,000 Btu/hr to 2,000,000 Btu/hr that are subject to proposed Rule 69.2.1.

Similarly, 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 Btu/hr to 2 Million Btu/hr would require a District Permit to Operate and comply with the NSR requirements. However, based on the proposed emission limits of new Rule 69.2.1 and a worst case scenario of continuous 24-hour daily operation, the potential to emit for a 2 Million Btu/hr unit would be significantly less than the 10 lbs/day NSR applicability threshold for the Best Available Control Technology.

CONCLUSION

There are no applicable existing or proposed District or federal regulations for combustion equipment subject to new proposed Rule 69.2.1. The District does not intend to submit new Rule 69.2.1 to be included in the federal State Implementation Plan (SIP). Thus, Rule 69.2.1 will not be a federally-applicable or enforceable requirement.



**COUNTY OF SAN DIEGO  
AIR POLLUTION CONTROL DISTRICT**

**INCREMENTAL COST-EFFECTIVENESS ANALYSIS**

**PROPOSED NEW RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS  
AND STEAM GENERATORS  
600,000 BTU/HR TO 2,000,000 BTU/HR**

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 new Rule 69.2.1 will reduce NO<sub>x</sub> emissions from currently uncontrolled small boilers, process heaters and steam generators with a heat input rating from 600,000 BTU per hour to 2,000,000 BTU per hour. The most efficient and cheapest technology to achieve emission standards required by the rule is the use of low-NO<sub>x</sub> burners that reduce emissions by approximately 73%, with the cost-effectiveness between \$4 and \$6 per pound.

Two other technologies exist that will provide higher emission reductions than those required by the rule – flue gas recirculation and catalytic reduction. However, both of them are significantly more expensive and not practicable for small units that will be regulated by Rule 69.2.1. In addition, all equipment subject to the proposed Rule 69.2.1 and complying with its requirements by using low-NO<sub>x</sub> 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 rule. Therefore, the incremental cost analysis requirement is not applicable to new proposed Rule 69.2.1.

**AIR POLLUTION CONTROL DISTRICT  
COUNTY OF SAN DIEGO**

**PROPOSED RULE 69.2.1 – SMALL BOILERS, PROCESS HEATERS AND  
STEAM GENERATORS**

**WORKSHOP REPORT**

A workshop notice was mailed to owners, operators, manufacturers and distributors of boilers, process heaters and steam generators in San Diego County. Notices were also mailed to all Economic Development Corporations and Chambers of Commerce in San Diego County, the U.S. Environmental Protection Agency (EPA), the California Air Resources Board (ARB), and other interested parties.

The workshop was held on October 7, 2008, and was attended by 11 people. Written comments were also received after the workshop. The workshop comments and District responses are as follows:

**1. WORKSHOP COMMENT**

The title of Rule 69.2.1 seems to imply that the rule is applicable to units operated for industrial and commercial use only. However, boilers and water heaters in this size category are also used for space heating or hot water supply in residential buildings such as dormitories. If the rule applies to this type of unit as well, the terms “commercial” and “industrial” should be removed from the title to clarify that units rated 600,000 Btu/hr to 2 MMBtu/hr can also be used in residential applications.

**DISTRICT RESPONSE**

The District agrees. The title of the proposed rule has been revised as suggested.

**2. WORKSHOP COMMENT**

Does the District plan to develop a rule that would regulate boilers rated between 2 and 5 MMBtu/hr? If so, when would such a rule become effective?

**DISTRICT RESPONSE**

The District plans to develop a proposed rule to regulate boilers with a heat input rating between 2 and 5 MMBtu/hr. The rule is tentatively scheduled for consideration of adoption in 2010, with an effective date of one year after the date of adoption.

### **3. WORKSHOP COMMENT**

Why does the District propose to adopt Rule 69.2.1 that applies to smaller units rated less than 2 MMBtu/hr, before adopting a rule applicable to larger ones, between 2 and 5 MM Btu/hr?

#### **DISTRICT RESPONSE**

State law requires the District to expeditiously adopt all feasible measures to control emissions of ozone precursors, i.e., volatile organic compounds and nitrogen oxides. Currently, the only rule that regulates emissions from industrial and commercial boilers, process heaters and steam generators in San Diego County is Rule 69.2, which applies to units with a heat input rating of 5 MMBtu/hr or higher. Several air districts in California, including the South Coast Air Quality Management District (SCAQMD), have already adopted rules that control emissions from smaller units. These rules have different compliance requirements, depending on the heat input rating of regulated equipment.

For example, SCAQMD Rule 1146.2 specifies that any unit with a heat input rating of 2 MMBtu/hr or less that is sold, distributed, installed or operated in that district must be certified by a manufacturer for compliance with the rule emission limits, labeling and other requirements. SCAQMD Rule 1146.1, applicable for larger units, specifies NO<sub>x</sub> and CO emission limits, and requires the affected facilities to verify compliance by conducting specified source testing.

At this time, the District proposes the rule regulating units rated at 2 MMBtu/hr or less because these units are currently certified by the equipment manufacturers to comply with SCAQMD Rule 1146.2, which is similar to the District's proposed Rule 69.2.1. Therefore, the District can implement and enforce this rule based on the manufacturer's certifications.

Units rated greater than 2 MMBtu/hr are not presently certified by the manufacturers to meet applicable emission standards and other requirements. In addition, such units that use exclusively gaseous fuel are now exempt from the District's requirements to obtain a Permit to Operate. Therefore, the rule development process to control emissions from these units will take significantly longer time and require more District resources. As stated previously, the District is scheduled to consider adoption in 2010 of a new proposed Rule 69.2.2, which will control emissions from units rated between 2 and 5 MMBtu/hr.

### **4. WORKSHOP COMMENT**

Does the rule apply to pool heaters used at a residence?

#### **DISTRICT RESPONSE**

Residential pool heaters are typically rated less than 400,000 Btu/hr heat input, and units of this size would not be subject to the rule. However, Rule 69.2.1 would apply to a pool heater rated 600,000 Btu/hr or greater installed at a residence.

**5. WORKSHOP COMMENT**

If liquid fuel is used for backup purposes only, for example in case of emergencies, would the unit be subject to the proposed 40 ppm NO<sub>x</sub> emission limit?

**DISTRICT RESPONSE**

No. The emission standard as proposed in Subsection (d)(1)(ii) does not apply to units that operate with liquid fuel only as a backup. However, the 40 ppm NO<sub>x</sub> emission limit does apply to units that operate with liquid fuel as a primary fuel. Subsection (d)(1) has been revised to clarify this.

**6. WORKSHOP COMMENT**

Will boilers with a certification by the SCAQMD be accepted by the District?

**DISTRICT RESPONSE**

Yes, the District will accept a SCAQMD certification statement as demonstration of compliance with Rule 69.2.1.

**7. WORKSHOP COMMENT**

Section (f) of the rule requires labeling in accordance with the most current requirements of SCAQMD Rule 1146.2. In effect, this provision allows the requirements of SCAQMD rule to supersede those of Rule 69.2.1. The District should not defer its local regulatory authority to another air district with this provision.

**DISTRICT RESPONSE**

The District disagrees. The District has the authority to incorporate a standard by reference, which is a common usage in the development of rules and regulations. Some examples of this included in current District rules are references to other air districts' source test methods approved by the Environmental Protection Agency and the Air Resources Board.

However, the proposed language in Section (f) inadvertently excluded an option for a manufacturer to indicate whether the certification status of a unit offered for sale in San Diego County complies with the requirements of Rule 69.2.1 or with the most recent requirements of SCAQMD Rule 1146.2. The rule has been revised to correct this.

**8. WORKSHOP COMMENT**

SCAQMD Rule 1146.2 exempts units operating with propane. Will Rule 69.2.1 provide a similar exemption?

**DISTRICT RESPONSE**

No. SCAQMD Rule 1146.2 applies only to natural gas-fired units, and thus does not address units operating on propane, or liquefied petroleum gas (LPG) as it is commonly named. A few boiler manufacturers have indicated that it is technologically feasible to achieve 30 ppm NOx emissions when operating with LPG. Thus, the NOx emission limit in the proposed Rule 69.2.1 for units operating on gaseous fuel also applies to units operating on propane. A definition for “gaseous fuel” has been added for clarification.

**9. WORKSHOP COMMENT**

The State Boiler Safety Orders requires units installed in California to have a permit to operate, annual inspection and an onsite attendant. However, units that are rated 400,000 Btu/hr and less are exempt from these requirements. From an economic standpoint, a facility may opt to install units rated 400,000 Btu/hr and less as a means of not incurring the labor costs necessary of having an attendant onsite. Does the rule address the installation of multiple smaller units in lieu of installing a larger unit, as a potential means to circumvent the rule?

**DISTRICT RESPONSE**

No. Proposed Rule 69.2.1 does not address this situation. At this time, there are no emission control requirements for units rated less than 600,000 Btu/hr. However, the District may consider regulating NOx and CO emissions from such equipment in the future.

**10. WORKSHOP COMMENT**

Does Rule 69.2.1 require a unit subject to it to have a registration or a permit to operate? Would any fees be required after the rule goes into effect?

**DISTRICT RESPONSE**

Proposed Rule 69.2.1 does not require a permit to operate, fees or registration for units subject to it. Presently, this equipment is exempt from the permit to operate or registration requirements by other District rules.

**11. WORKSHOP COMMENT**

How many boilers in the applicable size range of this rule are located in San Diego County?

**DISTRICT RESPONSE**

Units of the size specified in the proposed rule are not currently subject to the permit requirements. Thus, the District does not have a complete inventory of the existing units in San Diego County. However, based on natural gas usage data from the local utility company and information from various boiler studies in California, the District estimates that there are approximately 800 existing units, rated between 600,000 Btu/hr and 2 MMBtu/hr, which are presently operating in San Diego County.

**12. WORKSHOP COMMENT**

What impact will this rule have on NOx emissions reductions?

**DISTRICT RESPONSE**

The District estimates approximately 65 tons per year of NOx emissions reductions upon full implementation of Rule 69.2.1.

**13. WORKSHOP COMMENT**

Are boilers that operate with emissions in excess of 40 ppm NOx currently available on the market? What are the typical emissions for this type of unit?

**DISTRICT RESPONSE**

Most manufacturers currently carry units that operate with NOx emissions in excess of 40 ppm. Their emissions will vary depending on manufacturer, but the typical range for NOx emissions from such units is approximately 100 ppm or less when operating with natural gas or liquid fuel.

**14. WORKSHOP COMMENT**

Does the District plan to revise Rule 69.2.1 and apply the revised rule to existing units?

**DISTRICT RESPONSE**

No. As proposed, Rule 69.2.1 applies to new units only, which are defined as those installed, manufactured, or sold on or after one year after the date of adoption. An existing unit would not be subject to the rule unless it is replaced, at which time the replacement unit shall comply with the rule requirements.

**15. WORKSHOP COMMENT**

Does the proposed rule allow the installation of used equipment?

**DISTRICT RESPONSE**

Yes, provided that used equipment comply with the requirements of Rule 69.2.1 on the date of installation. Since units certified according to the requirements of the proposed rule are presently available on the market, such a unit, even if it is used, may be installed after the effective date of the rule.

**16. WORKSHOP COMMENT**

When will the proposed rule become effective?

**DISTRICT RESPONSE**

The rule will become effective one year after the date of adoption by the Air Pollution Control Board, which is tentatively scheduled for March 25, 2009.

**17. WORKSHOP COMMENT**

Most air districts have an effective date for their rules of January 1<sup>st</sup> in a calendar year. Will the District provide a similar effective date?

**DISTRICT RESPONSE**

A one-year period from the date of adoption is a typical timeframe provided for compliance in other District rules. This should provide adequate time for the affected facilities due to the current availability of certified compliant units on the market.

**18. WORKSHOP COMMENT**

Will there be any future workshops after this one?

**DISTRICT RESPONSE**

No, the District does not plan to conduct any additional public workshops for the proposed Rule 69.2.1 unless some new comments would necessitate it.

**19. WORKSHOP COMMENT**

If a unit operates less than 220,000 therms annually, is it exempt from the NO<sub>x</sub> emissions standards in Rule 69.2? Will that exemption limit be changed?

### **DISTRICT RESPONSE**

Rule 69.2, which is applicable to units rated 5 MMBtu/hr and greater, currently exempts from the NOx emissions standards those units that operate with an annual heat input less than 220,000 therms. Based on information available at this time, the District has determined it is not cost-effective to lower the exemption level. Thus, the District does not have any current plans for revising the exemption limit.

### **20. WRITTEN COMMENT**

The rule should be revised to require boiler manufacturers to have their units tested for certification based on a Wobbe Index of 1385, which is the maximum range of natural gas quality allowed in San Diego County by the California Public Utilities Commission. This can be accomplished by using actual test gas with a composition of Wobbe Index of 1385, or simulating a Wobbe Index of 1385 by increasing the gas flow to the tested unit by 5%. This requirement would ensure that the equipment is certified to comply with the emissions standards of the rule for the expected range of natural gas quality in the county.

### **DISTRICT RESPONSE**

The District is not authorized to regulate the quality or chemical composition of natural gas or any other fuel, and proposed Rule 69.2.1 does not address the quality or composition of a gaseous fuel used in boilers sold or installed in San Diego County. Provided the unit is certified by the manufacturer to comply with the emission limits of Section (d)(1) and other rule provisions, it will satisfy the proposed rule requirements.

If the District were to implement the suggestion to regulate the heating value of natural gas used by small boiler manufacturers, then potentially expensive manufacturing facility modifications could be necessary to allow for controlled addition of hydrocarbons and inert gases to their natural gas supplies as necessary to maintain required heating values. Simply increasing the flow of natural gas to the boiler would not necessarily simulate a natural gas with a higher heating value, which typically comprises more propane and ethane and less methane. Facility modifications, if necessary, could be a lengthy process and therefore might raise compliance issues. Further, based on limited discussions with small boiler manufacturers, there are concerns that manufacturers would choose to forego the relatively small San Diego market in order to avoid facility modification costs. If so, a host of unintended adverse consequences for the San Diego region could result.

The District concurs that combustion of natural gas with a higher heating value (compared to the natural gas historically used in San Diego County) could result in emission increases from natural gas-fired combustion equipment. The District encourages Southern California natural gas distribution utilities to work with equipment manufacturers on design modifications that minimize emission impacts of temporal and geographic variations in natural gas composition.



**21. WRITTEN COMMENT**

Section (f) of the rule requires that units offered for sale in San Diego County be labeled to illustrate compliance with the requirements of SCAQMD Rule 1146.2. This provision is inconsistent with Section (e) which requires certification for compliance with the requirements of proposed Rule 69.2.1, or alternatively, of SCAQMD Rule 1146.2.

**DISTRICT RESPONSE**

The District agrees. Section (f) has been revised to provide consistency with Section (e). See also response to Comment No. 7.

**22. WRITTEN COMMENT**

The future NO<sub>x</sub> emission limits for operation on natural gas in proposed Rule 69.2.1 (30 ppm) differ from the limits in SCAQMD Rule 1146.2 (20 ppm). The emission limits of Rule 69.2.1 should be revised to be consistent with those in Rule 1146.2.

**DISTRICT RESPONSE**

The District disagrees. The current NO<sub>x</sub> emission limit in SCAQMD Rule 1146.2 for units rated between 400,000 Btu/hr and 2 MMBtu/hr is 30 ppm, which is consistent with the standard proposed in Rule 69.2.1 and the rules in the majority of California air districts. The more stringent NO<sub>x</sub> emission limit of 20 ppm in Rule 1146.2 will go into effect only in 2010. Since present manufactured equipment can readily comply with the 30 ppm NO<sub>x</sub> emission limit for units operated on gaseous fuel, proposed Rule 69.2.1 will not be revised at this time. However, the District will assess at a future date if the technology available in 2010 will warrant reducing the NO<sub>x</sub> emission limit to 20 ppm.

**23. EPA COMMENT**

The NO<sub>x</sub> emission limits in Subsection (d)(1) are 30 ppm for units operating on gaseous fuel and 40 ppm for those operating on liquid fuel. Ventura County Air Pollution Control District Rule 74.11.1 limits NO<sub>x</sub> emissions to 30 ppm for units with the same rated heat input capacity regardless of fuel. The District should lower the 40 ppm liquid fuel limit for units of this size or explain why more stringent limits are not reasonably available.

**DISTRICT RESPONSE**

Discussions with Ventura County APCD staff have indicated that to the best of their knowledge, there are no units rated less than 2 MMBtu/hr that are permitted to operate with liquid fuel within the county. Other local air districts in California have shared similar findings.

The District also contacted a few boiler manufacturers. They have stated that the NOx emission limit of 30 ppm can only be achieved for units operating on natural gas, but not on liquid fuel. Boiler manufacturers have also indicated that it is technologically feasible to achieve a 40 ppm NOx emission limit for units operating on liquid fuel as required by the proposed rule by using low-NOx burners, flue-gas recirculation or other NOx emission reduction techniques. However, because such units are not commonplace in the market, they will be very expensive.

There are presently only three existing boilers in San Diego County permitted to operate on liquid fuel, out of approximately 800 units of the size affected by the proposed Rule 69.2.1. The location where two of these units are operating also has natural gas available, and therefore future replacement units may be fueled by natural gas. The third unit is at a remote location that does not have any access to natural gas, operates only sporadically and may not need a replacement (and therefore may not trigger rule requirements) for a long time considering its age of less than 10 years.

#### **24. EPA COMMENT**

Section (e)(3) should specify where the referenced South Coast Air Quality Management District certification statement is described.

#### **DISTRICT RESPONSE**

The District agrees. Subsection (e)(3) has been revised to reference SCAQMD Rule 1146.2, Section (d).

#### **25. ARB COMMENTS**

ARB staff had no comments on the proposed rule.

NY:RC:jlm  
12/04/08