

**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_x 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 NOx 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 NOx 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 1st 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_x 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 NOx 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 NOx 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 NOx 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 NOx 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 NOx emission limit to 20 ppm.

23. EPA COMMENT

The NOx 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 NOx 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 NO_x 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 NO_x emission limit for units operating on liquid fuel as required by the proposed rule by using low-NO_x burners, flue-gas recirculation or other NO_x 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.

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12/04/08