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SCAQMD

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PARKER BOILER SUMMARY OF LEGISLATIVE ACTIVITIES OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT IN REGARDS TO BOILERS, WATER HEATERS & PROCESS HEATERS

There are a number of Regulations presently enacted by the SCAQMD, which affect the use of boilers in all of Orange County, most of Los Angeles and Riverside Counties and a portion of San Bernardino County. SCAQMD is the governing agency for stationary sources of emissions in these areas and their goals and authority are described on their Web Site @ <http://www.aqmd.gov> & in brochures, which are available from the SCAQMD. For our boiler products the thrust of the SCAQMD's efforts have been to reduce the NO_x (Nitrous Oxide) and CO (Carbon Monoxide) emissions from our exhaust stack.

The information contained within is based on printed and verbal information given to us by the SCAQMD. To verify this information for your particular boiler, please contact the SCAQMD. Also refer to SCAQMD-CHART 1146.2 (219, 222, 1146,1146.1) and our Summary of Rules. For information in other Air Districts, contact that District.

The SCAQMD area is a non-attainment area for air quality. SCAQMD has been expanding the range of Permitted Equipment and the scope of their governed equipment. When Permit Applications are evaluated in a non-attainment area the process of New Source Review occurs. As part of this process BACT (Best Available Control Technology) & LAER (Lowest Achievable Emission Rate) are evaluated by district staff to determine the allowable Emission Rate. Due to quickly changing NO_x and BACT levels on permitted units over 2,000,000 BTUH, we believe it is imperative to apply for and obtain a Permit to Operate from your local AQMD early in the planning stages. Low NO_x emission systems may have a significant impact upon project cost, building, space and utilities.

TABLE OF CONTENTS

I. KEY WORDS

- A. BACT**
- B. LAER**
- C. SOURCE TEST**
- D. FEE SCHEDULE**
- E. TITLE V FACILITY OR MAJOR SOURCE**
- F. RECLAIM**
- G. CLEAN FUELS PROGRAM**

II. RULES GOVERNING BOILERS

- A. RULE 219** (Permitting Rule, New & Existing Boiler).
 - 1. New Boilers**
 - 2. BACT for New Boilers**
 - 3. Existing Boilers**
- B. RULE 222** (Boiler Registration Program).
- C. RULE 1146.2** (Retrofit Rule for Boilers, Water Heaters & Process Heaters .075 to 2.0MM BTUH).
 - 1. New Units**
 - 2. Existing Units**
 - a. Phase 1**
 - b. Phase 2**
 - c. Phase 3**
 - 3. Exemptions/Uncertainties in Rule**
- D. RULE 1146.1** (Retrofit Rule for Boilers 2.0 to 4.99MM BTUH).
 - 1. Schedule**
- E. RULE 1146** (Retrofit Rule for Boilers above 5.0MM BTUH).
- F. RULE 1121** (Water Heaters 0 to .075MM BTUH).

III. PARKER CAPABILITIES

I. KEY WORDS & DEFINITIONS

A. BACT (Best Available Control Technology)

When dealing with Air Quality Regulatory Agencies it is important to understand BACT. The following is the definition of BACT from the SCAQMD Manual.

"Rule 1302(f) defines BACT as the most stringent emission limit or control technique which:

1. Has been achieved in practice for such Permit unit category or class source; **or**
2. Is contained in any State Implementation Plan (SIP) approved by the Environmental Protection Agency (EPA) for such Permit unit category or class of source. A specific limitation or control technique shall not apply if the owner or operator of the proposed source demonstrates to the satisfaction of the Executive Officer that such limitation or control technique is not presently achievable; **or**
3. Is any other emission control technique found by the Executive Officer to be technologically feasible and for such class or category of sources or for a specific source, and cost effective as compared to measures as listed in the Air Quality Management Plan or Rules adopted by the District Governing Board.

Determining the emission level allowed for a particular boiler involves a current study of BACT and LAER.

It is an involved process to establish an emission level for a Permit. It should be noted that the District's BACT emission levels may change at any time.

B. LAER (Lowest Achievable Emission Rate)

LAER is a Federal term, which applies to various sources of equipment. It is the most stringent control measure demonstrated in any State Implementation Plan for a category and source of emissions. LAER is a Federal requirement, which requires this stringent of an emission level. It is important in the South Coast Air Quality Management District because if LAER is a lower value than BACT then LAER must be used in the issuance of a permit in the SCAQMD in many cases. This is proven important in the case of a new regulations, which require Low NOx Levels on large boilers.

C. SOURCE TEST

A Source Test is currently required on most new boilers undergoing the Permit process and on many Low NOx retrofitted units. It is paid for by the Owner and performed by a CARB certified test lab. If successful, it proves to the SCAQMD that the unit is operating in compliance with its NOx requirements, and the terms of its Permit to Operate. We have Source Tested many of our models and the District may accept a Source Test from an identical unit.

D. FEE SCHEDULE, RULE 301

Anytime a boiler, subject to SCAQMD Rules, is installed, evaluated, altered, or moved, the District imposes fees. We suggest contacting the SCAQMD or Parker Boiler Co. to obtain the exact fee for your particular situation. Annual boiler fees are assessed on permitted or registered boilers.

E. TITLE V FACILITY OR MAJOR SOURCE

A Title V Facility or Major Source is one that exceeds 4-tons per year emissions of NOx, SOx or ROG, or exceeds 29-tons per year of CO, and this shows on the Annual Emissions Report.

F. RECLAIM

The Regional Clean Air Incentives Market (Reclaim) is an open market trading system that has been adopted. It contains a Universe of Sources of Companies or municipal types that emit more than 4 tons per year of ROC (Reactive Organic Compounds), NOx, or SOX.

(RECLAIM cont'd)

These Companies must reduce emissions each year and there are various methods which can be employed to accomplish this. Low NOx Boilers at these facilities may help these Companies comply in certain instances.

G. THE CLEAN FUELS PROGRAM

Adopted in January 1988, the Clean Fuels Program promotes the use of clean fuels. Propane is mentioned. Oil is not acceptable as a primary fuel for a boiler. However, in an emergency situation where a standby fuel is required and where the use of propane and or methanol is not feasible, it **might** be possible to obtain an Oil Burning Permit. In these instances annual operating hours for the fuel oil are limited and Low NOx fuel oil may be required. Sean Cullins is in charge of permitting hospitals in the SCAQMD.

If a standby fuel is required by the user, propane is an option. A number of jobs have been going in with Propane Air Mixing Stations. There is a local hospital burning soybean oil. In order to confirm what stand-by fuel will be acceptable, a Permit should be applied for and obtained in the design stage so that a stand-by fuel system is only designed one time.

II. RULES GOVERNING BOILERS

A. Rule 219 (Permitting Rule)

1. New Boilers

This Rule requires all Boilers new and existing larger than 2,000,000 BTU/HR, (2.0MM BTU) to obtain a Permit from SCAQMD. In order for a new Boiler to be Permitted, it will be evaluated and will need to comply with the BACT (Best Available Control Technology) & LAER (Lowest Achievable Emission Rate) as determined by SCAQMD Staff. All oil fired boilers regardless of input must be Permitted.

2. BACT for New Boilers

The following explains our latest understanding of BACT for boilers:

- a. Filing an application and obtaining a Permit is the only way to really know what the District will accept for a particular installation.
- b. We recommend obtaining a Permit during the design phase so design and construction can be done with the boiler or boilers as a known entity in terms of space requirements, cost, etc.
- c. The Boiler must be started up within a certain time from Permit application date. Refer to Parker Chart Summary.

Part of the Permit process regards evaluating and assigning a required NOx and CO Emission to a boiler. On October 20, 2000, the SCAQMD Board passed an amendment to Rule 1302. Part of the amendment creates a differentiation between major and minor sources regarding the determination of BACT (or the required NOx level on a boiler).

This amendment states the BACT level required for a minor source for a boiler from 2,000,000 BTU (48 HP) to 20,000,000 BTUH is 12 PPM NOx and 100 PPM CO @3% O₂ (for a Water Tube Boiler).

Note that a higher NOx level may be allowed for a process heater.

For major sources the NOx and CO level required depends on a BACT Evaluation conducted on a case-by-case basis.

Major Sources, or Title V facilities are larger polluting facilities, which are listed by the SCAQMD. The 12 PPM NOx level is for minor sources only; major sources may require a lower NOx level.

Parker can achieve the 12 PPM NOx on certain boilers with our Ultra Low NOx Burner System, please contact us at the factory to discuss

Due to the quickly changing NOx and BACT Level we feel it is imperative to apply for and obtain a permit from the SCAQMD, or other governing district, early in the planning stages so that the required NOx Level is known, as Low NOx emission systems may have a significant impact upon project cost, building, space, and utilities.

3. Existing Boilers

Existing boilers larger than 50 H.P. or 2.0MM BTUH should have been Permitted by June 3, 1989. If the boiler is not Permitted, further operation is in violation of SCAQMD Rules. If the capacity is not needed, it may be possible to de-rate units. By doing this it is possible to make the unit exempt from future Permitting by de-rating it below 2.0MM BTUH. SCAQMD staff has indicated a physical change to the boiler must be made to insure a restricted input. (E.G. removing burners on an atmospheric boiler). **However, before any derating is done the SCAQMD should be consulted to determine if Permits should be pulled and if so what type of Permit Application should be filed. Any derating of boilers requires prior SCAQMD approval. Additionally, the boiler must meet Rule 1146.2. Refer to Rules 1146 & 1146.1.**

B. Rule 222 (Boiler Registration Program)

Rule 222 has been implemented by the SCAQMD. Rule 222 requires that the owner of a boiler from 1-2,000,000 BTUH Input (24-48 HP) register with the district for a fee. The compliance date for registration is January 1, 2001. However, this may be extended until January 1, 2002. For new Certified equipment, this is a one-time fee. For older non-certified equipment, annual charges will be assessed.

C. RULE 1146.2 (Retrofit Rule for Boilers, Water Heaters & Process Heaters .075 to 2.0MM BTUH)

Rule 1146.2 was adopted on January 9, 1998 and went into effect on January 1, 2000. This Rule effects boilers and water heaters from 75,000 to 2,000,000 BTU.

Previous SCAQMD Regulations relating to NOx emissions had a threshold of 2,000,000 BTU input per boiler or water heater. Rule 1146.2 lowers the threshold control level for NOx to include virtually all commercial boilers and water heaters. The Rule requires certification by Manufacturer's of new boilers and water heaters. The Rule now requires retrofit of existing boilers and water heaters. The details of the Rule can be determined from our Parker Chart Summary SCAQMD-CHART and the following description.

1. NEW UNITS FROM 75,000-2,000,000 BTUH (1.8-48 HP)

- a. As of January 1, 2001, all new boilers and water heaters sold in the SCAQMD from 75,000 to 400,000 BTUH (1.8-10 HP) must be certified to 55 PPM NOx and 400 PPM CO @ 3% O₂.
- b. As of January 1, 2000, all new boilers and water heaters sold in the SCAQMD with an input of 400,000 to 2,000,000 BTUH (10-48 HP) must be certified to 30 PPM NOx and 400 PPM CO @ 3% O₂.

This now means that any new unit sold in the SCAQMD or in the VAPCD (Ventura County) must be Low NOx. Note that Certification is required on units at and below 2,000,000 BTUH (48 HP) in the SCAQMD, per Rule 1146.2. Ventura APCD Rules vary slightly from SCAQMD. **IT IS ILLEGAL TO OFFER FOR SALE ANY NEW, NON-CERTIFIED UNIT!**

2. EXISTING UNITS FROM 400,000-2,000,000 BTUH (10-48HP)

The following summarizes the requirements for existing units and retrofit provisions:

a. **Phase 1**

By July 1, 2002, all existing boilers in the field with an input of 1,000,000-2,000,000 BTUH (24-48 HP) must retrofit to Low NOx if they were manufactured prior to the year 1992, and they do not qualify for an exemption.

b. **Phase 2**

By January 1, 2005, all units from 1,000,000 to 2,000,000 BTUH (24-48 HP) must retrofit to Low NOx if they were manufactured during the years 1992 to 1999, and they do not qualify for an exemption.

c. **Phase 3***

By January 1, 2006, all units from 400,000 to 1,000,000 BTUH (10-24 HP) must retrofit to Low NOx if they do not qualify for an exemption.

3. EXEMPTIONS/UNCERTAINTIES IN RULE (Units less than 400,000 BTU (10 HP) are exempt)

- a. The retrofit requirement does not apply to a unit burning less than 9,000 therms per year of gas, if the user can prove this. The facility gas bill, a dedicated fuel meter, or an hour-meter may be utilized to prove the therm exemption.
- b. Residences and multiple residences with up to 4 units are exempt.
- c. *The requirements to retrofit existing boilers, subject to Phase 3, may change depending upon the recommendations of a Rule Advisory Committee, which has been established with the new Law.
- d. De-rate: It may be possible to de-rate your unit to change its 1146.2 category.
- e. Parker Boiler Service Department will be performing certified retrofits on Parker Boilers.
- f. A new Low NOx Certified Unit may be a viable option for an owner.

D. RULE 1146.1 (Retrofit Rule for Boilers 2.0 to 4.99MM BTUH)

This Rule required all boilers from greater than 2.0 to 4.99 million BTUH to achieve a 30 PPM NOx level unless they could qualify for an exemption. If this level could not be achieved by installing a Retrofit Device, then a new boiler was required. It was possible to qualify for an Exemption if you used less than 18,000 Therms/Year and installed a Totalizing Meter by 1/1/92 for each fuel and each piece of equipment and have available for inspection by the Executive Officer Annual Fuel Use Data by 2/1/93. This Exemption equates to: 900 hours/year on a 2.0 million BTUH unit and 360 hours/year on a 5.0 million BTUH unit (at full fire). Tune ups will be required for exempt units.

1. SCHEDULE for 1146.1:

- a. **By January 1, 1992:** Install Fuel Meter (If going for exemption).
- b. **By February 1, 1993:** Demonstrate compliance (fuel use data documenting less than 18,000 therms per year use and tune up documentation if going for exemption).
- c. **By January 1, 1993:** Submit application and plans for retrofit.
- d. **By July 1, 1994:** Demonstrate compliance with the Rule (30 PPM). (Successful Source Test complete)

We have retrofitted a large number of Parker Boilers and other type boilers with our Premix Metal Fiber Burner System.

E. RULE 1146 (Retrofit Rule for Boilers above 5.0MM BTUH)

This Rule required all Boilers 5.0 million BTUH and larger to achieve a 30 PPM NOx Level, unless they qualified for an exemption. If this level cannot be achieved by installing a Retrofit Device, then a new boiler was required. Permits are required.

It was possible to qualify for an Exemption if you used less than 90,000 Therms/Year and installed a Totalizing Meter for each fuel and each piece of equipment by 2/1/89 and keep available for inspection by the SCAQMD Executive Officer Annual Fuel Use Data. Also, you needed to submit an Emission Control Plan by 9/1/89, and it was required that the Owner have the Boiler tuned on a semi-annual basis.

The scheduled implementation period for this Rule has passed. Most people with boilers in this size range have Implemented a strategy for dealing with this Rule. Consult with us or SCAQMD for questions regarding this Rule or for questions relating to existing boilers which are not presently Permitted with SCAQMD.

F. RULE 1121 (Water Heaters 0 to .075MM BTUH)

This Rule governs the NOx and efficiency of new small Water Heaters sold in the District. It requires these units to obtain Manufacturer's Certifications for Low NOx. All Water Heaters sold in the District must meet this Rule.

III. PARKER CAPABILITIES

Parker has offered our Premix Metal Fiber Low NOx Burner System ("L") for almost ten years. This system is available on our Hot Water, Steam, Indirect & Thermal Liquid Boilers & Heaters. The "L" Burner System can be provided on a new boiler or as a retrofit.

We have hundreds of these systems installed providing reliable service to our customers. The system has proven itself extremely reliable with excellent NOx repeatability. At this time Parker Boiler is guaranteeing a NOx Level of 12-PPM @ 3% O₂ with 100 PPM CO @ 3% O₂ on certain Ultra Low NOx jobs for Hot Water for Steam Boilers only.

Parker was the first manufacturer to achieve Low NOx Certification by SCAQMD to Rule 1146.2. Now all of our Low NOx products are certified for use in the SCAQMD and in the Ventura AQMD.

We have also introduced a new line of Steam Boilers, incorporating Low NOx Atmospheric Burners ("LA" Series). The system is available on 9.5, 30, 40, & 50 HP Steam Boilers at this time. It is certified by SCAQMD to Rule 1146.2 and approved by a Nationally Recognized Test Lab.

Be assured that Parker will continue to offer the most efficient and durable Low NOx Burner Systems for new and retrofit applications at prices consistent with our standards for quality and safety.

Factory start-up is provided in Southern California and Manufacturers Representative start-up is provided in Central and Northern California.

Parker Boiler Co. maintains a factory service organization which is available to meet Customer needs. Contact Parker Boiler Co. for new Retrofit or Applications.

We have presented this information so that you can be aware of the Boiler Rules and make your boiler/water heater decisions with these Rules in mind.

For further information on Rules contact:

South Coast Air Quality Management District

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