SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

Draft Staff Report
Proposed Rule 1147 – NOx Reductions from Miscellaneous Sources

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EXECUTIVE SUMMARY

Proposed Amended Rule 1147 (PAR 1147) is intended to provide relief to businesses and other regulated operations by extending compliance dates for small and low emission units and providing other flexibility that will reduce implementation costs and facilitate compliance. In addition, PAR 1147 clarifies exemptions and other requirements and will benefit the regulated community. PAR 1147 will result in delayed emissions reductions but will achieve most of the NOx reductions as the current SIP approved rule.

Rule 1147 was adopted on December 5, 2008 and is a vital component of the attainment strategy to meet the federal PM2.5 ambient air quality standards by 2014 as well as meet the ozone standards. Rule 1147 is based on two control measures from the 2007 Air Quality Management Plan (AQMP): NOx reductions from Non-RECLAIM Ovens, Dryers and Furnaces (CMB-01) and Facility Modernization (MSC-01). Rule 1147 established nitrogen oxide (NOx) emission limits for a wide variety of combustion equipment and affects both new and existing (in-use) combustion equipment.

Under Rule 1147, equipment requiring SCAQMD permits that are not regulated by other NOx rules must meet an emission limit of 30 or 60 parts per million (ppm) of NOx depending upon equipment type and process temperature. Compliance dates for emission limits are based on the date of equipment manufacture and emission limits are applicable to older equipment first. Owners of existing equipment are provided at least 15 years of use before they must meet rule emission limits and the first units that must meet the emission limits are 25 to 50 years old. Specific categories of newer units have later compliance dates. Smaller and low emission units currently get five more years to comply with emission limits than larger units. These small sources are not subject to rule emission limits until they are at least 20 years old. These units are required to demonstrate compliance with rule emission limits starting July 1, 2017.

Rule 1147 also established test methods and provides alternate compliance options including a process for certification of equipment NOx emissions through an SCAQMD approved testing program. Certification eliminates the requirement for end-users to test their equipment. Other rule requirements include equipment maintenance and recordkeeping.

Rule 1147 was amended September 9, 2011 to delay implementation dates one to two years, remove a requirement for fuel or time meters and provide compliance flexibility for small and large sources. In addition, the rule amendment added a requirement for an assessment of rule impacts on small sources through an updated evaluation of technologies and cost for retrofitting small and low emission sources (less than one pound per day NOx) that are not typically subject to the best available control technology (BACT) requirement as new sources.

SCAQMD staff is proposing to amend Rule 1147 to incorporate stakeholders' technical concerns, recommendations made in a technology assessment for small sources, and provide compliance options for issues that have been raised by stakeholders. The key elements of the proposed amendment are as follows:

- Remove the requirement to comply with an emission limit for units with a heat input rating of less than 325,000 Btu/hour [Table 1, (c)(1)]. These units would still be subject to maintenance and recordkeeping requirements;
- Change the NOx emission limit for low temperature afterburners, burn-off ovens, incinerators, and related equipment from 30 ppm to 60 ppm [Table 1, (c)(1)];
- Change the compliance date for small in-use units (with NOx emissions of less than one pound per day) from a schedule based on a 20 year lifetime to a 30 year lifetime or when the units are replaced or retrofit [(c)(1) and (c)(6)];
- Change the compliance date for existing in-use heated process tanks and pressure washers from a schedule based on a 15 to 20 year lifetime to when the units are replaced or retrofit. These units would not be required to comply with an emission limit at any specific age and may be relocated with a facility move [(g)(8) and (g)(11)];
- Add a testing exemption for ultra-low NOx infrared burners [(g)(9)];
- Provide compliance flexibility for low emission units by clarifying options for demonstrating emissions less than one pound per day [(c)(6)];
- Add an exemption for units with emission less than 1 pound per day when a company relocates a facility and remains under the same ownership [(g)(11)];
- Add an exemption for units that become subject to the rule upon amendment of Rule 219 [(g)(10)];
- Add flexibility for demonstrating compliance with emission limits including an alternative compliance demonstration option based on a manufacturer's performance guarantee [(d)(1) – (d)(11)];
- Clarify an exemption for food ovens [(a), (g)(1), and (g)(2)]; and
- Clarify an exemption for flare type systems [(g)(3)(E)].

The proposed amendment adds and clarifies a number of exemptions for a variety of equipment categories. An exemption from the requirement to comply with the emission limit at 30 years of age is proposed for heated process tanks and conveyorized pressure washer systems because it is difficult to retrofit existing units without replacing the whole unit. An exemption from complying with an emission limit is proposed for low emission units (less than 1 pound per day) that are relocated because an entire facility is relocated. This relocation exemption for these small and low emission units is available when the

facility owner and company remain same for 36 months before and 36 months after the facility is moved. An exemption is also proposed for units that become subject to the rule upon amendment of SCAQMD Rule 219. A testing exemption for infrared burners is being proposed because these systems have NOx emission much less than 30 ppm. The proposed amendment also completes the exemption of food ovens from Rule 1147 and clarifies an exemption for flare based incineration systems which cannot be retrofit with different combustion systems.

If implemented, PAR 1147 is expected to result in NOx emission reductions foregone of up to 0.9 ton per day in 2017. However, most of the emission reductions foregone will be recaptured starting in 2017 because the existing units will be regularly replaced and upgraded over time. Staff estimates that less than 0.05 ton/day of NOx emissions will be permanently forgone because of the proposed changes to emission limits and exemptions including units 325,000 Btu or smaller, heated process tanks and spray washers, and the proposed changes to emission limits. This is about 5 percent of the 0.9 ton per day forgone due to delay of compliance dates.

CHAPTER 1: BACKGROUND

INTRODUCTION

The California Health and Safety Code requires the SCAQMD to adopt an Air Quality Management Plan (AQMP) to meet state and federal ambient air quality standards and adopt rules and regulations that carry out the objectives of the AQMP. The California Health and Safety Code also requires the SCAQMD to implement all feasible measures to reduce air pollution.

SCAQMD Rule 1147 was adopted December 2008 to seek reductions from NOx emission equipment not regulated by other SCAMD rules and, because of the number and variety of equipment affected, the rule compliance schedule was phased in over 10 years. The NOx reductions from Rule 1147 are a vital component of our attainment strategy and essential for achieving compliance with federal and state ambient air quality standards for PM2.5, PM10, and ozone.

REGULATORY HISTORY

Rule 1147 – NOx Reductions from Miscellaneous Sources, was adopted by the SCAQMD Governing Board on December 5, 2008. Rule 1147 incorporates two control measures of the 2007 Air Quality Management Plan (AQMP): NOx Reductions from Non-RECLAIM Ovens, Dryers and Furnaces (CMB-01) and Facility Modernization (MSC-01).

Control measure MCS-01 proposed that equipment operators meet best available control technology (BACT) emission limits at the end of the equipment's useful life. Control measure CMB-01 proposed emission NOx limits in the range of 20 ppm to 60 ppm (referenced to 3% oxygen) for ovens, dryers, kilns, furnaces and other miscellaneous combustion equipment. Emission reductions from the equipment addressed by Rule 1147 and control measure CMB-01 of the 2007 AQMP were proposed in prior AQMPs (e.g., Control Measure CMB-02 from the 1997 AQMP).

Rule 1147 established nitrogen oxide (NOx) emission limits for a wide variety of combustion equipment and affects both new and existing (in-use) combustion equipment. Rule 1147 requires equipment with SCAQMD permits that are not regulated by other NOx rules to meet an emission limit of 30 to 60 parts per million (ppm) of NOx depending upon equipment type and process temperature. Compliance dates for emission limits are based on the date of equipment manufacture and emission limits are applicable to older equipment first. Owners of existing equipment are provided at least 15 years of use before they must meet rule emission limits. Specific categories of newer units have later compliance dates. The first units required to comply with the emission limits were 20 to 50 years old. In addition, small sources are provided five more years to comply with emission limits when they are at least 20 years old. The owners of small units and units with emissions of less than one pound per day have later compliance dates starting in July 1, 2017.

Rule 1147 also established test methods and provides alternate compliance options including a process for certification of equipment NOx emissions through an SCAQMD and EPA approved testing program. Other rule requirements include equipment maintenance and recordkeeping.

Rule 1147 was amended September 9, 2011 to delay implementation dates one to two years, and remove a requirement for fuel or time meters and provide compliance flexibility for small and large sources. In addition, the rule amendment added a requirement for an assessment of rule impacts on small sources through an updated evaluation of technologies and cost for retrofitting small and low emission sources that are not typically subject to the best available control technology (BACT) requirement as new sources.

A draft technology assessment was made available to the public in January 2016. Since the release of the draft technology assessment, staff met with stakeholders at a Rule 1147 Task Force meeting in February 2016, selected a contractor to review the technology assessment with the input of stakeholders, arranged for the reviewer to meet with stakeholders at two Rule 1147 Task Force meetings, and SCAQMD staff completed the technology assessment. A Draft Technology Assessment was submitted to the Governing Board at the March 4, 2016 meeting. The Technology Assessment was reviewed by a third party contractor selected by a panel that included stakeholders. The third party reviewer also received comments from stakeholders and completed their review in October 2016. After additional input from stakeholders, the Technology Assessment was finalized in February 2017 and provided with the preliminary draft rule amendment and staff report for the Public Workshop on February 15, 2017.

The proposed amended rule is based on the recommendations of the technology assessment and independent third party review. In addition, the proposed amendment includes recommendations and requests from stakeholders that were made during development, after publication of the technology assessment, and during the rule development process.

AFFECTED INDUSTRIES

A wide variety of processes use equipment that is regulated by Rule 1147. These processes include, but are not limited to, food products preparation, printing, textile processing, product coating; and material processing. A large fraction of the equipment subject to Rule 1147 heats air that is then directed to a process chamber and transfers heat to process materials. Other processes heat materials directly such kilns, process tanks and metallurgical furnaces.

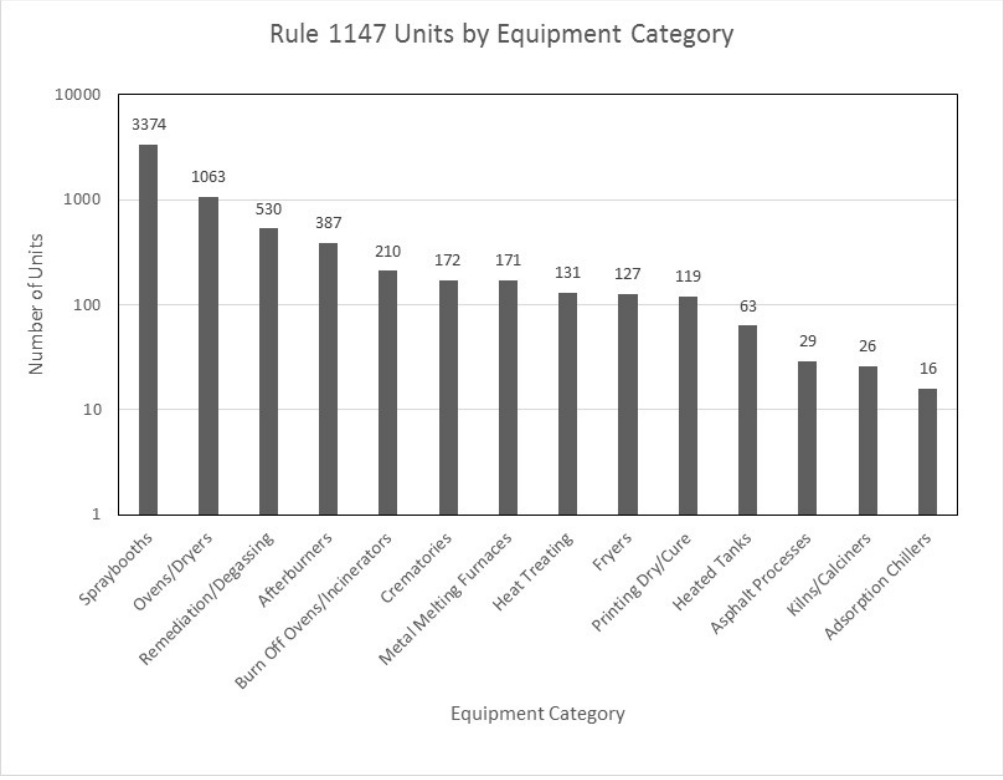
Rule 1147 affects manufacturers (NAICS 31-33), distributors and wholesalers (NAICS 42) of combustion equipment, as well as owners and operators of ovens, dryers, furnaces, and other equipment in the District (NAICS 21, 23, 31-33, 42, 44, 45, 48, 49, 51-56, 61,

62, 71, 72, 81, and 92). The units affected by the rule are used in industrial, commercial and institutional settings for a wide variety of processes. Some examples of the processes regulated by the rule include metal casting and forging, coating and curing operations, asphalt manufacturing, baking and printing.

Staff originally estimated approximately 6,600 units subject to the emission limits of Rule 1147 are located at approximately 3,000 facilities. Staff estimated that about 1,600 units at about 800 facilities affected meet the NOx emission limits of Rule1147. This leaves about 2,200 facilities that are expected to require retrofit of burners in their equipment. Staff estimated as many as 2,500 permitted units with NOx emission limits one pound per day or more and an additional 2,500 permitted units with NOx emission limits of less than one pound per day will require modifications to comply with the emission limits.

Based on an update of the active permitted equipment in the SCAQMD, an estimate of the number of equipment potentially subject to Rule 1147 and the fraction of units in different categories is presented in Figure 1-1. Staff estimates that as many as 6,400 pieces of equipment are potentially subject to Rule 1147 requirements. More than half of the units (≈ 3,400) are spray booths and prep-stations. Excluding spray booths and prep-stations, staff estimates that at least one quarter of the units in each category will meet Rule 1147 emission limits without retrofitting burners.

Figure 1-1



The second largest category of equipment is ovens and dryers with approximately 1,100 units subject to the rule. Staff estimates that at least one-third of the permitted ovens will meet Rule 1147 emission limits based on a sample of the burners used in the ovens. There are also approximately 500 additional ovens and dryers with SCAQMD permits that are not subject to Rule 1147 because they are heated electrically, with infrared lamps, or using a boiler or thermal fluid heater. Electric, infrared lamp, and boiler and thermal fluid heated ovens and dryers are not included in the Figure 1-1.

The third largest group of equipment is air pollution control units that capture and incinerate VOCs, CO, PM and toxics. There are approximately 900 afterburners, degassing units and remediation units. The remaining categories of equipment have significantly fewer units with high temperature processes (metal melting, heat treating, burn off ovens, kilns and crematories) being the next largest group with approximately 700 units in these five categories. Although these categories have fewer equipment, many units have significantly higher emissions than spray booths and small ovens. The technology assessment included in Appendix B provides a more detailed summary of the industries and equipment categories affected by Rule 1147.

Based on permitted emissions and information provided by manufacturers, vendors and businesses, staff has calculated an emissions inventory of 3.0 to 5.2 tons of NOx per day from the equipment regulated by Rule 1147. Spray booths (≈ 3,400 units) contribute about 0.5 to 0.6 tons per day. Other types of equipment with permit limits of less one pound per day (≈ 1,500 units) have NOx emissions totaling about 0.4 tons per day. Equipment with a potential to emit of one pound per day or more (≈ 1,500 units) contribute NOx emissions of 2.1 to 4.2 tons per day. These emission estimates are consistent with the 6.2 tons per day emission estimate developed from the 2007 AQMP for adoption of Rule 1147 in 2008.

It should be noted that the AQMP inventory was based on fuel use and default emission factors. The 2007 AQMP inventory did not take into account lower emissions from units that met BACT emission limits. Using the midpoint of the estimated range from the above calculation for larger sources gives a total inventory estimate for all equipment of about 4.1 tons of NOx per day. This estimate is consistent with the AQMP inventory and permit information that at least one quarter of the units have burners that can comply with BACT and Rule 1147 emission limits.

In addition, staff estimates that as many as half of the units (750 out of 1,500) with a potential to emit one pound per day or more may have actual daily NOx emissions less than a pound per day. Many of these units with actual emissions less than one pound per day have BACT and Rule 1147 compliant burners that significantly reduce their emissions. If this estimate is correct, then more than half of units with emissions of one pound per day or more of NOx (about 375) have already submitted test protocols and test results. Moreover, because of the Rule 1147 compliance schedule, the remaining half of the 750 units with emission of one pound per day or more have been permitted since the

late 1990s and installed burners that comply with BACT and Rule 1147 NOx emission limits.

PUBLIC PROCESS

The proposed changes to Rule 1147 are a product of a multiyear effort to assess low NOx technology and cost-effectiveness of retrofitting small and low emission affected by Rule 1147. Since the September 2011 amendment of Rule 1147, staff has met with representatives from affected businesses, equipment vendors, manufacturers, trade organizations, and other interested parties. Including the rule development efforts to adopt SCAQMD Rule 1153.1 in 2014, amend Rule 219 in 2013 and the technology assessment, staff has held two or more task force meetings every year since 2012.

During the development of the technology assessment staff visited several printing businesses, food manufacturing facilities, and a local manufacturer of ovens and burn-off furnaces. In 2016, staff held three meetings of the Rule 1147 Task Force in order to receive additional input on the draft technology assessment with the last meeting on November 8, 2016. Recently, staff has also met with and visited local businesses including a manufacturer of conveyorized pressure washers, a metal finishing company, and a large printing company to observe operations and equipment affected by Rule 1147. For this current proposed amendment, Rule 1147 Task Force meetings were held on January 17 and April 20, 2017. A Public Workshop and CEQA scoping meeting for PAR 1147 was held on February 15, 2017.

CHAPTER 2: SUMMARY OF PROPOSED RULE 1147

PROPOSED AMENDED RULE REQUIREMENTS

NOx EMISSION LIMIT CHANGES

EXEMPTIONS

OPTIONS FOR DEMONSTRATING UNIT EMISSIONS

OPTIONS FOR COMPLIANCE WITH EMISSION LIMITS

RELOCATION EXEMPTION FOR LOW EMISSION UNITS

PROPOSED AMENDED RULE REQUIREMENTS

SCAQMD staff is proposing to amend Rule 1147 to reflect the recommendations made in the Rule 1147 Technology Assessment for Small and Low Emission Sources and the third party review of the technology assessment. In addition, staff proposes to provide additional compliance options for issues that have been raised by stakeholders. The key elements of the proposed amendment are as follows:

- Remove the requirement to comply with an emission limit for units with a heat input rating of less than 325,000 Btu/hour [(c)(1)]. These units would still be subject to maintenance and recordkeeping requirements to minimize emissions;
- Change the NOx emission limit for low temperature afterburners, burn-off ovens, incinerators, and related equipment from 30 ppm to 60 ppm [Table 1, (c)(1)];
- Change the compliance date for small in-use units (with NOx emissions of less than one pound per day) from a schedule based on a 20 year lifetime to a 30 year lifetime or when the units are replaced or retrofit [(c)(1) and (c)(6)];
- Change the compliance date for existing heated process tanks and pressure washers from a schedule based on a 15 to 20 year lifetime to when the units are replaced or retrofit. These units are not required to comply with an emission limit at any specific age and may be relocated with a facility move [(g)(8) and (g)(11)];
- Add a testing exemption for ultra-low NOx infrared burners [(g)(9)];
- Provide compliance flexibility for low emission units by clarifying options for demonstrating emissions less than one pound per day [(c)(6)];
- Add an exemption for units with emission less than 1 pound per day when a company relocates a facility and remains under the same ownership [(g)(11)];
- Add an exemption for units that become subject to the rule upon amendment of Rule 219 [(g)(10)];
- Add flexibility for demonstrating compliance with emission limits including an alternative compliance demonstration option based on a manufacturer's performance guarantee [(d)(1) – (d)(11)];
- Clarify an exemption for food ovens [(a), (g)(1), and (g)(2)]; and
- Clarify an exemption for flare type systems [(g)(3)(E)].

The proposed rule amendment provides relief to affected businesses by delaying compliance dates for existing in-use small and low emission units. For units with emissions less than one pound per day of NOx, compliance dates are extended by 10 years to when a unit is 30 years old. However, most units would be replaced, have the

heating system modified or replaced, or sold to another facility or as scrap before they become 30 years old. When a unit is sold, replaced, or modified it would be required to comply with emission limits at that time.

Equipment categories with new unit compliance dates after January 1, 2010 also benefit from this 10 year extension from 20 to 30 years of age. These categories include spray booths, fryers and afterburners, degassing units, thermal oxidizers, catalytic oxidizers, vapor incinerators, and other equipment used for similar processes. However, heated process tanks, evaporators and conveyorized pressure washer systems would have an additional delay and would not be required to comply with an emission limit at 30 years of age.

NOX EMISSION LIMIT CHANGES

The proposed amendment will raise the NOx emission limit for low temperature (less than 800 °F) afterburners, burn-off ovens, incinerators, and related equipment from 30 ppm to 60 ppm. This recommendation from the technology assessment is due to the emission characteristics of the preferred burner technology used in these incineration processes. In addition, the proposed amendment removes the emission limit for units with heat ratings of 325,000 Btu per hour or less. While these units would not be subject to emission limits under the proposed amendment, they would still be subject to the maintenance requirements in the rule. In addition, new units are potential subject to BACT requirements of new source review (SCAQMD Regulation XIII).

EXEMPTIONS

The proposed rule adds and clarifies a number of exemptions for a variety of equipment categories. An exemption from the 30 years compliance date is proposed for heated process tanks and conveyorized pressure washer systems because it is difficult to retrofit existing units without replacing the whole unit. A testing exemption for infrared burners is being proposed because these systems have NOx emission much less than 30 ppm. An exemption from complying with an emission limit is being proposed for low emission units (less than 1 pound per day) that are relocated because an entire facility is relocated. This relocation exemption for these small and low emission units is available when the facility owner and company remain same for 36 months before and 36 months after the facility is moved. An exemption is also proposed for units that become subject to the rule upon amendment of SCAQMD Rule 219 which defines when equipment require an SCAQMD permit. The proposed amendment also completes the exemption of food ovens from Rule 1147 and clarifies an exemption from the rule for flare based incineration systems which cannot be retrofit with different combustion systems.

OPTIONS FOR DEMONSTRATING UNIT EMISSIONS

The proposed amendment will provide additional flexibility and reduce cost to affected businesses. PAR 1147 clarifies options for businesses to identify equipment with emissions of less than one pound per day that are eligible for later compliance that are available in the current rule and provides additional detail on those options. Equipment eligible for a later compliance date pursuant to paragraph (c)(6) can be identified through either daily or monthly recordkeeping or permit conditions with process limitations that result in emissions of less than one pound per day.

A variety of permit conditions have been used by SCAQMD to identify equipment that is not subject to BACT or offsets because they have emissions of less than one pound per day. SCAQMD has used operating limits with time or fuel meters or equipment rating to identify equipment with emissions of less than one pound per day. However, other permit conditions are also used and the following list only provides a summary of some of the types of conditions found in SCAQMD permits:

- The unit rated heat capacity specified on the permit.
- A condition in the permit with a process limit resulting in less than one pound per day of NOx emissions including but not limited to fuel use, material throughput or operating schedule. A person owning or operating a unit subject to this type of condition maintains records of unit fuel use, material throughput, operating hours or other relevant process activity.
- A permit condition limiting the number of operating hours per day or month and recordkeeping. Emissions are calculated as the unit's maximum hourly emission rate in pounds multiplied by hours of operation. The maximum hourly emission rate is equal to the rated heat input capacity of the unit multiplied by the unit's emissions at the rated heat input capacity.
- A permit condition limiting daily or monthly fuel use and recordkeeping. Emissions are calculated as the process emission rate per unit of fuel multiplied by the amount of fuel used.

PAR 1147 identifies a variety of options for units to demonstrate emissions less than one pound per day of NOx. An owner or operator of a unit may choose to add a time or fuel meter to assist recordkeeping for a unit. Addition of a meter does not require a permit modification. However, the owner/operator may request such a modification to the permit and install a time or fuel meter to help demonstrate that emissions are less than one pound per day. In addition, the owner/operator may use monthly recordkeeping to demonstrate less than a pound per day emissions if they have installed a meter.

OPTIONS FOR COMPLIANCE WITH EMISSION LIMITS

The proposed rule provides additional testing options that are not present in the current rule. One new option for testing ovens, dryers, and other low temperature applications will provide flexibility for testing of these unit across the operating range of the combustion system in these units. The additional testing option is for when the unit is warmed up, burners are not firing at their maximum rate, and are cycling on and off or are modulating to adjust and maintain the temperature in the unit. The owner/operator and their contractor has the test the unit while the combustion system modulates or cycles on and off at the lowest set temperature for any process for which the unit is used. Emissions are averaged over the time the burners are firing to heat the unit. If the burner(s) cycle on and off, then the times the burner(s) do not fire are excluded from the calculation of average emissions. Alternatively, owner/operators may use the existing option of testing the unit when the combustion system operates at less than 35 percent of its maximum firing rate.

A second option proposed for units with heat rating of 2 million Btu per hour and lower is to allow the use of a burner manufacturer's performance guarantee. To be eligible for this compliance option, the following information would be required to be submitted to the SCAQMD as part of a permit application:

- A signed letter or bid from the burner manufacturer or authorized distributor to the owner of operator of the unit that guarantees NOx emissions of the proposed combustion system will comply with the applicable emission limit for specified processes, operating conditions, and process temperatures,
- At least five District approved missions tests of same the burner used in the same type of process and operating in the same temperature range proposed for the unit,
- A signed contract or purchase order from the owner or operator of the unit to the burner manufacturer or authorized distributor for the purchase of the combustion system identified in the manufacturers performance guarantee, and
- A signed letter from the burner manufacturer or authorized distributor to the District that guarantees NOx emissions of the proposed combustion system will comply with the applicable emission limit for specified processes, operating conditions, and process temperatures.

These items must be submitted with a permit application. In addition, the combustion system description in the guarantees and contract or purchase order must be identical to the combustion system proposed to be installed in the permit applications and installed in the unit. All required documentation must be provided at the time of an application for a District permit. The emission test results submitted to support the manufacturer guarantee must have been approved by the SCAQMD prior to submittal of the permit application. If all required documentation is not included with the permit application, the

District will issue the permit with a requirement that the owner or operator will demonstrate compliance with the emission limit through emissions testing by a specified date as required in subdivisions (c) and (d) of the rule. Any delay in providing required documentation for the manufacturer's performance guarantee by the owner or operator, manufacturer or authorized representative, or owner or operators contractor will not delay the review and approval of the permit by the District and the permit will be issued with a permit requirement to demonstrate compliance with the emission limit through emissions testing by a specified date as required in subdivisions (c) and (d) of the rule.

RELOCATION EXEMPTION FOR LOW EMISSION UNITS

The proposed rule amendment includes an exemption for units with emission less than one pound per day that are moved to a new location because the entire facility was relocated. This exemption would allow an owner or to move a low emission unit with the relocated facility to a different location or consolidate one entire facility with another when both facilities are part of the same company under the same ownership. These small units would still be subject to other requirements in the rule that would trigger compliance with emission limits including but not limited to: applicable compliance dates including unit age, when the unit is replaced, and at the time of a combustion system modification and combustion system replacement. This relocation exemption is not applicable to the transfer or sale of a unit or facility to a different company, owner, or operator. This relocation exemption is not applicable to the purchase or other acquisition of a unit for installation in a different location.

CHAPTER 3: IMPACT ASSESSMENT

IMPACT ANALYSIS

COST EFFECTIVENESS

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ANALYSIS

SOCIOECONOMIC ASSESSMENT

INCREMENTAL COST EFFECTIVENESS

COMPARATIVE ANALYSIS

PUBLIC COMMENTS

IMPACT ANALYSIS

If implemented, PAR 1147 is expected to result in NOx emission reductions foregone of up to 0.9 tons per day in 2017. However, the emission reductions foregone will be eventually recaptured because the existing units will be regularly replaced and upgraded over time. At an average replacement rate of 4% per year, this would result in recovery of the emissions forgone in 25 years. Staff estimates that 4,900 to 5,650 out of 6,400 units are affected by these proposed changes.

NOx emission reductions foregone from equipment subject to Rule 1147 can be estimated using information on typical use provided by operators visited by SCAQMD staff and potential to emit (PTE) for affected units in SCAQMD records. Based on natural gas consumptions, business owners and equipment vendors indicate typical automotive booths and other booth operations at maintenance facilities, businesses that repair non-automotive equipment, and other specialty shops have emissions of less than one third pound (0.3 pound) NOx each day they operate. However, many booths have greater emissions because they are used for manufacturing operations or can have more than one shift per day. Up to 200 booths used in manufacturing and other large coating applications may have emissions exceeding a pound per day. In addition, while many auto body shops do not paint cars every day during the week, larger operations can operate two shifts per day.

Based on this information, the 3,400 permitted booths and spray stations are estimated to have emissions of about 0.5 ton NOx per day (= [3,400 units X approximately 0.3 pound NOx/day per all booth types]/[2000 pounds/ton]). About 1,500 other types of combustion equipment including, but not limited to, ovens, dryers, and furnaces also have PTE of less than one pound of NOx per day. Because there is a wide distribution of PTE estimated for these other types of equipment, average emissions from each of these units is assumed to be 0.5 pound of NOx per day for a total of 0.4 ton NOx per day from these 1,500 units (= [1,500 units X 0.5 pound NOx/day]/[2,000 pounds/ton]). An additional 750 units with a PTE of one pound of NOx per day or greater may have actual emissions less than one pound of NOx per day. The estimated emissions from these 750 units is about 0.3 ton NOx per day (= [750 units X 0.8 pound NOx/day]/[2,000 pounds/ton]).

Based on this approach, the approximately 4,900 to 5,650 units that may benefit from PAR 1147 and that have emissions of less than one pound of NOx per day are estimated to emit about 0.9 to 1.2 tons of NOx per day. The majority of equipment with emissions less than one pound of NOx per day are subject to a 30 ppm NOx emission limit which would reduce emissions by about 71 percent. However, a much smaller number of equipment that would be subject to a 60 ppm NOx limit and the emission reductions would be about 41 percent. Assuming a 66 percent reduction for the combination of equipment emission reductions of 41 percent to 71 percent, for the 4,900 to 5,650 units, the overall NOx emission reductions foregone is expected to range between

approximately 0.6 (excluding the 750 other units that might have emissions less than 1 pound per day) to 0.9 ton per day. Staff estimates that less than 0.05 ton/day of NOx emissions will be permanently forgone because of the proposed changes to emission limits and exemptions. This is about 5 percent of the 0.9 ton per day forgone due to delay of compliance dates. Thus, PAR 1147 will result in significant adverse air quality impacts. However, with the exception of about 0.05 ton/day, these emission reductions foregone will be made up as new rule compliant equipment replaces existing units.

COST EFFECTIVENESS

PAR 1147 will change the schedule for full implementation of the rule and provide other compliance flexibilities including making some emission limits less stringent. There is no additional cost for this proposed amendment and a cost effectiveness analysis is not applicable. The proposed changes to the requirements of PAR 1147 are designed to address issues related to technical feasibility and reduce cost to affected businesses.

CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ANALYSIS

The California Environmental Quality Act (CEQA), Public Resources Code Section 21000 *et seq.*, requires environmental impacts of proposed projects to be evaluated and feasible methods to reduce, avoid or eliminate significant adverse impacts of these projects to be identified and implemented. The lead agency is the "public agency that has the principal responsibility for carrying out or approving a project that may have a significant effect upon the environment" (Public Resources Code § 21067). Since the SCAQMD has the primary responsibility for supervising or approving the entire project as a whole, which is a proposed SCAQMD rule, it is the most appropriate public agency to act as lead agency (CEQA Guidelines[1] § 15051(b)).

PAR 1147 is considered a "project" as defined by CEQA. CEQA requires that all potential adverse environmental impacts of proposed projects be evaluated and that methods to reduce or avoid identified significant adverse environmental impacts of these projects be implemented if feasible. The purpose of the CEQA process is to inform the SCAQMD Governing Board, public agencies, and interested parties of potential adverse environmental impacts that could result from implementing the proposed project and to identify feasible mitigation measures or alternatives, when an impact is significant.

Public Resources Code Section 21080.5 allows public agencies with regulatory programs to prepare a plan or other written documents in lieu of an environmental impact report once the secretary of the resources agency has certified the regulatory program. The SCAQMD's regulatory program was certified by the secretary of resources agency on March 1, 1989, and has been adopted as SCAQMD Rule 110 – Rule Adoption Procedures to Assure Protection and Enhancement of the Environment. Pursuant to Rule 110 (the rule which implements the SCAQMD's certified regulatory program),

[1] The CEQA Guidelines are codified at Title 14 California Code of Regulations § 15000 *et seq.*

SCAQMD prepared a Notice of Preparation/Initial Study (NOP/IS) which identified environmental topics to be analyzed in a Draft Environmental Assessment (EA). The NOP/IS provided information about the proposed project to other public agencies and interested parties prior to the intended release of the Draft EA. The NOP/IS was distributed to responsible agencies and interested parties for a 30-day review and comment period from February 1, 2017, to March 3, 2017. The initial evaluation in the NOP/IS identified the topic of operational air quality as potentially having potentially significant adverse impacts requiring further review. During the public comment period, the SCAQMD received two comment letters relative to the NOP/IS.

Following the release of the NOP/IS, further analysis of the proposed project indicated that the type of CEQA document appropriate for the proposed project is a Subsequent Environmental Assessment (SEA), in lieu of an EA. The SEA is a substitute CEQA document, prepared in lieu of a Subsequent EIR (CEQA Guidelines § 15162(b)), pursuant to the SCAQMD's Certified Regulatory Program (CEQA Guidelines § 15251(l); codified in SCAQMD Rule 110). Therefore, a SEA is appropriate because new information of substantial importance, which was not known and could not have been known at the time the Final EA was certified for the adoption of Rule 1147 in December 2008 (referred to herein at the December 2008 Final EA) and the Final Subsequent EA that was certified for the amendments to Rule 1147 in September 2011 (referred to herein as the September 2011 Final SEA), became available (CEQA Guidelines § 15162(a)(3)). Further, PAR 1147 is expected to have significant effects that were not discussed in the previous December 2008 Final EA or September 2011 Final SEA (CEQA Guidelines § 15162(a)(3)(A)). In the event that new information becomes available that would change a project, the lead agency shall prepare a subsequent Environmental Impact Report (EIR) (CEQA Guidelines § 15162(b)). However, under SCAQMD's certified regulatory program, an equivalent document, a subsequent EA, can be a substitute for preparing a subsequent EIR.

The SEA is also a public disclosure document intended to: 1) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental impacts of the proposed project; and 2) be used as a tool by decision makers to facilitate decision making on the proposed project.

Thus, the SCAQMD, as lead agency for the proposed project, prepared a Draft SEA pursuant to its Certified Regulatory Program. The Draft SEA identified and analyzed the topic of operational air quality as the only area that may have significant adverse impacts if the proposed project is implemented because PAR 1147 is expected to result on NOx emission reductions foregone of up to 0.9 tons per day in 2017. The Draft SEA concluded that only the topic of operational air quality emission impacts would have significant adverse impacts. Because PAR 1147 may have statewide, regional or areawide significance, a CEQA scoping meeting was required for the proposed project pursuant to Public Resources Code § 21083.9(a)(2) and was held at the SCAQMD's Headquarters in conjunction with the Public Workshop on February 15, 2017. Further,

pursuant to CEQA Guidelines § 15252, since significant adverse impacts were identified, an alternatives analysis and mitigation measures are required and are included in the SEA.
The Draft SEA was released for a 46-day public review and comment period from March 24, 2017 to May 9, 2017. The comments made at the CEQA scoping meeting and the responses to these comments are included in Appendix D of the Draft SEA. The comment letters received relative to the NOP/IS and the responses to the comments are included in Appendix E of the Draft SEA. In addition, all comments received during the public comment period on the analysis presented in the Draft SEA will be responded to and included in an appendix to the Final SEA.

Prior to making a decision on the adoption of PAR 1147, the SCAQMD Governing Board must review and certify the Final SEA, including responses to comments, as providing adequate information on the potential adverse environmental impacts that may occur as a result of adopting PAR 1147.

SOCIOECONOMIC ASSESSMENT

PAR 1147, if adopted, would 1) extend the compliance schedule for low emission existing in-use units (i.e., with NOx emissions of less than one pound per day) and all existing in-use heated process tanks; 2) make emission limits less stringent for equipment in certain specified categories; 3) allow owners of existing in-use low emission units to relocate a unit without requiring the unit to demonstrate compliance with the rule emission limit when the unit is moved during a facility relocation; and 4) increase the age limit from 20 to 30 years for required compliance demonstration among all equipment with NOx emissions less than one pound per day. These proposed amendments are based on technical feasibility considerations that were validated through a technology assessment and intended to provide flexibility that would delay and/or reduce implementation costs to affected businesses and facilitate compliance. PAR 1147 would additionally add a test exemption for ultra-low NOx direct-fired infrared burners that would reduce compliance cost. Moreover, owners or operators of units with a unit heat rating of 2 million Btu/hour or less would be provided with the option to submit with its permit application a burner manufacturer's performance guarantee in lieu of the emission testing requirement. This option could further reduce compliance cost for these owners or operators. The remaining amendments, proposed to clarify exemptions and other requirements, would benefit the regulated community in general but would have few cost impacts as they are administrative in nature.

There are four CEQA alternatives to the proposed amendments. Alternative A is the No Project Alternative where the proposed amendments would not be adopted. Alternative B considers a more stringent age requirement for compliance demonstration (25 years) than the proposed amendments but still less stringent than the existing rule. At the same time, it does not provide a relocation exemption and is thus as stringent as the existing rule in this regard. However, it considers additionally requiring compliance with emission limits

when multiple similar process units at a facility have combined NOx emissions greater than one pound per day—a requirement more stringent than the existing rule. Alternative C considers a less stringent age requirement (none) than both the proposed amendments and the existing rule. It also considers exempting all pressure washers from complying with any emission limit, which is less stringent than the proposed amendments or existing rule. Similar to Alternative C, Alternative D considers no age requirement for compliance demonstration and compliance exemption for all pressure washers; moreover, it also considers exempting all units with NOx emissions less than one pound per day[2] (demonstrated through recordkeeping), making it the least stringent CEQA alternative of all.

Therefore, compared to the existing rule, PAR 1147 and CEQA Alternatives C and D are expected to result in delayed (due to less stringent compliance schedule) and avoided (due to additional exemptions) incurrence of compliance cost and overall cost-savings. CEQA Alternative A would not result in any cost impact as it maintains the status quo. CEQA Alternative B would delay the compliance schedule by up to five years due to its less stringent age requirement than what is in the existing rule, thereby resulting in maximally five years of compliance cost avoided. However, additional compliance cost is also expected, as Alternative B considers an additional compliance requirement for facilities with combined NOx emissions greater than one pound per day from multiple similar process units. In the case where a large number of facilities would be subject to this requirement, Alternative B could potentially result in additional compliance cost beyond what is expected to be incurred by the affected facilities for compliance with current rule requirements and the proposed project.

DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY CODE SECTION 40727

California Health and Safety Code Section 40727 requires that prior to adopting, amending or repealing a rule or regulation, the SCAQMD Governing Board shall make findings of necessity, authority, clarity, consistency, non-duplication, and reference based on relevant information presented at the public hearing and in the staff report. In order to determine compliance with Sections 40727, 40727.2 require a written analysis comparing the proposed amended rule with existing regulations.

The following provides the draft findings.

Necessity: A need exists to amend Rule 1147 to provide additional time to implement the technology to meet the NOx emission limits.

[2] Overall, under Alternative D, exemptions would apply to low emission units whose emissions limits would be changed under the proposed project, heated tanks and pressure washers, and units rated less than or equal to 325,000 Btu/hour.

Authority: The SCAQMD obtains its authority to adopt, amend, or repeal rules and regulations from California Health and Safety Code Sections 39002, 40000, 40001, 40440, 40440.1, 40702, 40725 through 40728, 41508, and 41700.

Clarity: PAR 1147 has been written or displayed so that its meaning can be easily understood by the persons affected by the rule.

Consistency: PAR 1147, which was approved into the State Implementation Plan on December 28, 2016, is in harmony with, and not in conflict with or contradictory to, existing federal or state statutes, court decisions or federal regulations.

Non-Duplication: PAR 1147 does not impose the same requirement as any existing state or federal regulation, and is necessary and proper to execute the powers and duties granted to, and imposed upon the SCAQMD.

Reference: In amending this rule, the following statues which the SCAQMD hereby implements, interprets or makes specific are referenced: Health and Safety Code sections 39002, 40001, 40702, 40440(a), and 40725 through 40728.5.

INCREMENTAL COST-EFFECTIVENESS

Health and Safety Code Section 40920.6 requires an incremental cost-effectiveness analysis for Best Available Retrofit Control Technology (BARCT) rules or emission reduction strategies when there is more than one control option that would achieve the emission reduction objective of the proposed amendments, relative to ozone, CO, SOx, NOx, and their precursors.

The only option for reducing NOx emission from equipment affected by PAR 1147 is the use of low NOx burners. While units are available that use electricity or boilers to provide heat, these equipment are either not regulated by the SCAQMD (electric ovens and furnaces) or are regulated by other SCAQMD rules (e.g., Rules 1146, 1146.1 and 1146.2). In addition, because PAR 1147 does not impose more stringent emission limits or other requirements, this provision does not apply to the proposed amendment.

COMPARATIVE ANALYSIS

Under Health and Safety Code Section 40727.2, the SCAQMD is required to perform a comparative written analysis when adopting, amending, or repealing a rule or regulation that has the potential to impose, a new emissions limit, or other air pollution control requirements. The comparative analysis is relative to existing federal or state requirements, existing or proposed SCAQMD rules and air pollution control requirements and guidelines that are applicable to industrial, institutional, and commercial combustion equipment.

The SCAQMD is not aware of any state or federal requirements regulating air pollution that are applicable to new or in-use PAR 1147 units. Because there are no state or federal requirements for PAR 1147 units, the proposed amendments are not in conflict with and do not duplicate any SCAQMD, state or federal requirement. In addition, the proposed amendment does not impose new requirements and this provision does not apply to the proposed amendment.

PUBLIC COMMENTS

Comments on the preliminary draft rule were provided by stakeholders at the February 15, 2016 public workshop and by email. Copies of the written comments received after the public workshop are provided in Appendix A. Comments received in writing or at the public workshop and SCAQMD staffs' response are summarized below.

Comments Received in Writing

Comment #1: Request the SCAQMD amend Rule 1147 as proposed in the preliminary draft rule to allow existing small incinerators and crematories with emission less than one pound per day NOx to continue to operate without having to demonstrate that they meet the rule emission limit. Alternatively have a different (higher) emission limit for units fired on propane.

Response: Proposed Amended Rule (PAR) 1147 will delay compliance dates for small and low emission units until they are rebuilt, replaced or reach an age of 30 years. This proposed amendment will provide equipment owners 10 additional years beyond the compliance date in the current rule. In addition, the proposed rule will raise the emission limit for lower temperature incineration processes to 60 ppm NOx which will benefit a variety of equipment and operations. These two changes in PAR 1147 will provide relief to owners of small units and provide SCAQMD the opportunity to collect additional emission data on propane fired processes that can help determine if propane fired units should be regulated separately.

Comment #2: Support the amendment of Rule 1147 to complete the removal of food ovens and coffee roasters from the rule. However, there is uncertainty regarding future requirements for coffee roasters because Rule 1153.1 has not been amended to regulate new units. There are different roaster configurations and the SCAQMD does not address these differences in other SCAQMD rules (Rule 1153.1, Regulation XIII (new source review and BACT) and the proposed amendment to Rule 1147.

Response: SCAQMD appreciates the commenter's support for the proposed rule amendment that will complete the removal of food ovens, including coffee roasters, from Rule 1147. However, let it be noted that SCAQMD rules (Regulation XIII – new source review and BACT, Rule 1153.1 and Rule 1147) do address differences in configurations of roasters, their burners and associated afterburners. Rule 1153.1 provides a testing exemption for direct fired infrared burners which are known to have low emissions (less

than 30 ppm) and are used in new and many old coffee roasters. Rule 1153.1 emission limits are different than those in Rule 1147 and are based on different temperature ranges. While Rule 1147 regulates afterburners used to reduce emissions of VOCs, particulate and odors from coffee roasters, food ovens, and many other types of equipment, Rule 1153.1 allows owners of coffee roasters with afterburners to test the roaster oven and associated afterburner separately or together. In addition, for new source review and BACT under Regulation XIII, the SCAQMD has consistently treated unfired (indirect-fired) boilers, ovens, and other units differently than direct fired units. Indirect-fired equipment use heat recovered from fuel fired boilers, engines, ovens, flares, incinerators or afterburners. Under NSR and BACT, the emission limits for systems with heat recovery are the appropriate limit applied to the fuel fired process from where the heat is recovered (e.g., turbine, engine, boiler, or afterburner) and are not based on the type of unfired unit that uses the recovered heat (e.g., boiler, dryer, oven, fryer or roaster).

Comments Made During the Public Workshop

Comment: Commend addition of a relocation exemption, but want to discuss this issue further. Also not sure what the difference is between modification and rebuilding. This proposal does not respond to the discussion in the last Stationary Source Committee meeting regarding equipment with one pound per day of emissions and Rule 222. This issue has been brought up previously and it was proposed that small sources should be transferred from the permit program to registration with recordkeeping. The rule is a financial burden on businesses in the District and should exempt most of the equipment subject to the emission limits.

Response: The preliminary proposal presented for amending Rule 1147 is the first step and the public workshop is an opportunity for all parties to provide input in the form of comments on the initial proposal, suggested changes to the proposal or alternative proposals for amending the rule. The proposal before you was presented to the public prior to the recent discussions at the Stationary Source Committee meeting. In addition, there is a separate parallel process that is evaluating and proposing amendments to Rules 222 and 219. The technology assessment for small units affected by Rule 1147 and the recommendations in that assessment from stakeholders, SCAQMD staff and the third party review are included in the proposed changes to the rule. The proposed amendment provides relief to businesses that operated small and low emission units affected by the rule. This proposed rule amendment is a relaxation and provides financial relief to affected businesses. However, this proposal delays significant emission reductions and the SCAQMD will have to address this proposed delay of emission reductions in the State Implementation Plan (SIP) for meeting ambient air quality standards.

Comment: The printing industry supports the proposal to allow owners of equipment with emissions of less than one pound per day to move the equipment without requiring compliance with the Rule 1147 emission limit. In some industries routine maintenance includes replacing worn out components. What do you mean by the term rebuilding and

what type of rebuilding would trigger the requirement to comply with the emission limit? Would rebuilding only trigger the requirement to comply with the emission limit after a specified number of years?

Response: SCAQMD staff has made commitments to revise the rule to provide owners of existing small and low emission units the opportunity to move their facility without having to immediately comply with the emission limit at the new location. However, it should be noted that new source review (NSR) under SCAQMD Regulation XIII has its own requirements and the proposed revision of Rule 1147 will not affect the requirements of that program. The proposed criteria for triggering compliance with the emission limit is focused on the replacement of units and rebuilding of a combustion system and associated components. SCAQMD staff will revise rule language to clarify the criteria.

Comment: Rule 1147 requires afterburners and other emission control devices to meet an emission limit of 60 ppm. However, BACT under new source review can require an emission limit of 30 ppm. Which emission limit must be met for a new application?

Response: Both emission requirements must be met by new units and that means a new unit must comply with the more stringent limit. Rule 1147 regulates new units but the focus is on existing older units. Therefore, the emission limit may not be as stringent as an emission limit for some types of new systems. New source review and BACT under Regulation XIII often have a more stringent emission requirement than rules that focus on existing equipment. This has been the case for boilers, process heaters, turbines, and engines in addition to equipment regulated under Rule 1147.

Comment: An oven with two burners and two exhaust stacks was tested and the unit did not pass the test. Each burner had emission less than 30 ppm. The oven should be allowed to operate.

Response: If the test was submitted to SCAQMD for review, it may be that there are issues with the test method or documentation of the test. If it has not been submitted for review, the testing company should provide the reasons for the unit not passing. Please discuss this case with SCAQMD staff so they can determine what issues must be resolved so that the unit would be allowed to operate.

Comment: What is the basis of the emission reductions foregone in the CEQA analysis? Two sections of the CEQA document related to air quality seem to contradict. Specifically the sections on emission reductions foregone and whether there is an impact on air quality. Would adding a permit condition to limit a unit's NOx emissions to less than one pound per day be an administrative change for a reduced fee?

Response: The explanation of the emission reductions foregone are in the Rule 1147 Technology assessment and are now discussed in the Draft Environmental Assessment

for the proposed rule amendment and the rule amendment draft staff report. The two sections of the CEQA document in question are not contradictory. There are two related components of the CEQA notice of preparation (NOP) and initial study (IS). One component is whether the proposed project will adversely affect air quality? The other components is whether the emission reductions committed to in the air quality management plan (AQMP) will be achieved? The previous AQMP contained a mechanism to allow technology forcing rules to be amended without compromising the total reductions commitment in the plan (a set aside). The SCAQMD will have to address the emission reductions foregone from the proposed amendment relative to the newly adopted AQMP and achieve those reductions in another way. With regard to fees charged for adding a permit condition, it is recommended that the commenter discuss a specific application with the SCAQMD Engineering and Permitting staff. Such fees are very much application specific.

Comment: Request that small ovens rated 400,000 Btu per hour and less be allowed to operate 24 hours per day and be exempt from the emission limit. Also request that alternative ways of demonstrating compliance such as the facility gas bill be allowed.

Response: The proposed amendment to rule 1147 changes emission requirements based on technical feasibility (the availability of burners that can meet the emission limits). Low NOx burners are available that achieve 30 ppm in low temperature applications at sizes of 400,000 Btu per hour and greater. Burners that can achieve 60 ppm are available in all sizes for all applications. The proposed amendment would also eliminate the emission limit requirement for small ovens with burners rated less than or equal to 325,000 Btu per hour, although other requirements of the rule will apply.

The current rule and the proposed rule amendment allow the use of a time meter on the combustions system or the facility gas bill to demonstrate emission are less than one pound per day. Under the current rule and the proposed amended rule, existing in-use units rated 400,000 Btu/hour and many larger units will be able to operate 24 hours per day producing emissions less than one pound per day. The reason small units will not exceed the one pound per day threshold is the burner does not operate 100% of the time the unit is operating or it does not operate at maximum capacity all of the time. The proposed amendment lists a screening criteria of 16 hours a day of burner operation (Table 3 in proposed amended Rule 1147) for units rated 325,000 to 400,000 Btu per hour. Depending upon the process, temperature, and operating cycle of the burner, units larger than 400,000 Btu per hour are also able to operate 24 hours per day without exceeding one pound per day of NOx emissions because their burners do no fire all of time after a unit reaches its set temperature. For the low cost heating system (e.g., comfort air heaters used in small dryers and ovens) some businesses use, a burner cycles between on and off and fires only a portion of the time a unit is on (i.e., 30% to 70%). In the future, SCAQMD incentive programs and adoption of Proposed Rule 1111.1 for commercial space heating furnaces will make available these type of units that will meet the Rule 1147 emission limit.

Comment: Request that parts washers be exempt from the rule or have an emission limit of 100 ppm NOx.

Response: The proposed amendment exempts existing in-use parts washers from the requirement to comply with an emission limit of 60 ppm because it is not technically feasible to replace the combustion system without replacing the whole unit. However, based on test results of new parts washers, it is technically feasible for new units to comply with the emission limit. In addition, there is more than one type of burner system that can comply with the limit. For that reason, staff's proposal requires only new units to demonstrate compliance with the NOx emission limit.

Comment: The SCAQMD has required auto body repair businesses to change their operation many times to comply with changing requirements. The SCAQMD forced the auto body repair industry to change to low VOC coatings which require the use of heaters to dry coatings if the booth is used for more than a few cars a day. Emissions from a booth are very low and not measurable. A business should be able relocate a facility and continue to use its old booths at the new location without having to meet a NOx emission limit. The cost to retrofit a unit is about $40,000. The SCAQMD should provide incentives to auto body businesses to modernize their equipment.

Response: The proposed rule amendment reduces requirements compared to the current rule and provides businesses additional time to comply with emission limits. The proposed amendment also allows owners of existing facilities to relocate their low emission units (less than one pound per day) with the facility to the new location without having to comply with the emission limit. The price quoted by the commenter for a new low NOx heating system for a spray booth is consistent with the prices vendors have provided to SCAQMD staff and used in the Rule 1147 technology assessment. Part of the cost for a rule compliant heating system is due to newer building code, fire code, and insurance requirements (i.e., UL and related standards). The SCAQMD Air Quality Management Plan (AQMP) does include incentive based measures for businesses to upgrade equipment and reduce emissions.

Comment: Metal finishing operations use heaters rated 400,000 Btu per hour for small dryers and ovens. Request that small ovens and dryers of this size be allowed to operate 24 hours per day or exempt them because they have low emissions.

Response: The proposed amendment requires new units rated 400,000 Btu per hour to comply with the emission limit because compliant burner systems in this size are available for low temperature operations. For existing in-use small heaters, both the proposed rule amendment and the current rule allow units of this size and greater to operate 24 hours per day because burners typically do not fire all of the time when an oven reaches the set temperature. The proposed amended rule includes tables to more clearly state screening criteria that can be used for identifying units with emissions less

than one pound per day. The proposed amendment lists a screening criteria of 16 hours a day of burner operation (Table 3 in proposed amended Rule 1147) for units rated 325,000 to 400,000 Btu per hour. The burner is not likely to be on 100% of the time an oven is operating so the oven can operate 24 hours a day while the burners is on for less than 16 hours per day. Depending upon the process, temperature, and operating cycle of the burner, units larger than 400,000 Btu per hour are also able to operate 24 hours per day without exceeding one pound per day of NOx emissions. In addition, the proposed amendment provides options to use monthly averaging and fuel usage. The SCAQMD has proposed incentive programs in the 2016 Air Quality Management Plan. In addition, adoption of Proposed Rule 1111.1 for commercial space heating furnaces will make available heating units of this size that will meet the Rule 1147 NOx limit.

Comment: One cannot use a low NOx burner for processes that operate at 300 °F and lower unless you also install a higher cost burner control system. Because of this limitation, electric ovens are used. Emissions also increase at the low operating range of low NOx burners.

Response: Because the cost effectiveness for retrofitting small units can be higher than the cost effectiveness criteria used for minor source BACT, the proposed amendment provides these units time to reach the end of their useful life before the unit is replaced (30 years). The cost effectiveness for new units is much lower. Specific categories of new units including fryers, spray booths, and afterburners and incinerators did not have to comply with emission limit as new units starting in 2010, have later compliance dates but would have to comply with emission limits when they are 30 years old.

The proposed amendment would also allow small ovens to use burners rated 325,000 Btu per hour without having to meet the 30 ppm emission limit. Electric ovens are a viable alternative for many processes. Another option is infrared burners that are used in many applications and do not require emissions testing under the proposed amendment. With the possible exception of infrared burners, the operating characteristics of both rule compliant and non-compliant burners are similar and is the reason the rule requires emission testing across the range of oven operation.

REFERENCES

REFERENCES

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SCAQMD, 2017. *Final Technology Assessment for Rule 1147 Small and Low Emission Sources*, South Coast Air Quality Management District, February 2017.

SCAQMD, 2007. *Air Quality Management Plan, Final 2007 AQMP Appendix IV-A, District's Stationary and Mobile Source Control Measures*, South Coast Air Quality Management District, June 2007.

SCAQMD, 1996. *1997 Air Quality Management Plan, Appendix IV-A, Stationary and Mobile Source Control Measures*, South Coast Air Quality Management District, November 1996.

Appendix A –Comment Letters Received

From: Marguerite Johnson [mcj92544@gmail.com]
Sent: Wednesday, March 01, 2017 5:32 AM
To: Wayne Barcikowski; Sam Wang
Subject: Re: Rule 1147 task Force

> On Mar 1, 2017, at 5:31 AM, Marguerite Johnson <mcj92544@gmail.com> wrote:

> Dear Sir,
> My name is Marguerite Johnson and I own and operate Circle of Life Pet Crematorium LLC located in Riverside County. I established COL in 1997 with one crematory unit and have since then added 3 additional units. I currently employ 7 full-time and 2 part time employees and have provided valuable services to thousands of bereaved pet owners and numerous veterinary hospitals and animal shelters throughout Southern California over the last twenty years.

#1

> In 2013 I met several times with AQMD engineer Rod Millican for counsel in how best to address our compliance with Rule 1147. Our situation is unique in that we do not have access to natural gas and operate entirely with propane. Our crematory is located in an agricultural area amongst citrus groves so through extensive investigation I have found bringing natural gas to our location is not a viable option. Mr. Millican also recommended updating / downsizing our cremation burner to a smaller high efficiency version. We replaced our primary cremation burner with a new 500,000 BTU Eclipse TJ0050 and updated our permit. We have been diligently working with the cremation unit manufacturer, burner manufacturers, and Total Air Quality for emissions testing and despite spending close to 30,000 dollars on updating equipment, testing and fees, to date we have not been able to reach the target of 60 ppm. I am not an engineer but have reached out to many resources regarding our situation and have been universally advised propane burns more efficiently than natural gas but with higher emissions. Even the daunting financial investment of purchasing new crematory units does not guarantee us compliance with current Rule 1147. Therefore I am looking for a realistic path to keep my business in operation and comply with AQMD requirements. Currently I have an extension allowing us to operate under the condition of limiting our propane usage to 78 gallons per day per unit. According to calculations by Total Air Analysis utilizing 78 gallons of propane / day limits our emissions to one pound per day. We have gas meters and maintain records for verification.
> I am requesting the task force to allow us to continue operating under this current 78 gallon propane / day restriction as a permanent resolution for compliance to Rule 1147. Or alternately raise the current NOx emission limit of 60 ppm (as specified for natural gas burners) to something realistically achievable for burners operating on propane. I strive to operate in an environmentally responsible manner and completely support the mission of preserving the clean quality of air in our beautiful Southern California but I am desperately looking for a resolution that will allow me to remain in compliance with AQMD rules that ensures the long term viability of my business. The livelihood of my family, my employees and their families depend upon it. I appreciate the opportunity to submit input on this rule and look forward to your feedback and direction.
>
> Respectfully yours,
>
> Marguerite Johnson
> Circle of Life Pet Crematorium LLC
> 43800 Whittier Ave
> Hemet CA 92544
>
> 951-536-1634 cell
> 951-927-8170 office

March 3, 2017

ENVERA CONSULTING

Via Electronic Mail Only
(wbarcikowski@aqmd.gov)

Mr. Wayne Barcikowski
Air Quality Specialist
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

Subject: **Volcanic Red, LLC Comment Letter to Proposed Amended Rule (PAR) 1147**

Dear Mr. Barcikowski:

On behalf of VOLCANIC RED, LLC DBA VOLCANIC RED COFFEES ("Volcanic Red"), ENVILEARN, LLC DBA ENVERA CONSULTING ("Envera Consulting"), appreciates the opportunity to submit the following comments related to the proposed amended rule (PAR) 1147 presented at the Public Workshop on February 15, 2017. Volcanic Red is a specialty coffee roaster located in Los Angeles.

Volcanic Red supports the proposed amendments in Rule 1147 that will exempt food ovens (coffee roasters) from Rule 1147 and thereby regulating them under Rule 1153.1. During this time, we understand that coffee roasters will only need to meet the requirements of best available control technology (BACT), if the need is triggered during the permitting process.

#2 While PAR 1147 does solve some of the challenges related to coffee roasters and the current Rule 1147, it does however, create an unknown for the future. Specifically, without seeing any proposal for Rule 1153.1, it does make it difficult to make capital decisions on equipment and upgrades since the future requirements for new, modified and/or relocated coffee roasters remain unknown at this time. In addition, it is unclear if the current emission limits of Rule 1153.1 will remain unchanged since coffee roasters exhibit a structure/configuration and emission relationship that is currently not being addressed by the AQMD (e.g., emissions from direct-fired coffee roasters vs. other configurations and burner types).

Again, we support proposed amendments in Rule 1147 as it relates to food ovens and look forward to working with you and the AQMD's Staff on the development of language for Rule 1153.1. Thank you for the opportunity to submit these comments. If you have questions regarding these comments, please feel free to contact me at +1 415 203 0520.

Sincerely,

Grant T. Aguinaldo
of ENVERA CONSULTING

cc: Gare Clark, Volcanic Red, LLC
Mike Ehler, Volcanic Red, LLC

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Appendix B – Final Technology Assessment for Rule 1147 Small and Low Emission Sources

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