

BOARD MEETING DATE: September 5, 2014

AGENDA NO. 32

PROPOSAL: Amend Rule 1111 – Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces

SYNOPSIS: PAR 1111 delays the compliance date for condensing (high efficiency) units until April 1, 2015. The proposed amendment would also add a mitigation fee-based compliance option to allow up to three years' delay for residential furnace manufacturers that require additional time to produce furnaces that meet the 14 ng/Joule emission limit. The proposed mitigation fee will be used to mitigate the air emissions impacts of the delay.

COMMITTEE: Stationary Source, March 21, 2014 and June 20, 2014, Reviewed

RECOMMENDED ACTIONS:

1. Authorize the Executive Officer to:
  - A. Fund contemporaneous NOx emission reduction projects or series of projects that will offset/mitigate excess emissions from sale of non-compliant heating furnaces through Rule 1111 mitigation fee alternate compliance plans, using funds set aside at the November 6, 2009 meeting for early compliance with Rule 1111 emission limits (Fund 27 – Air Quality Investment Fund).
  - B. Recognize upon receipt into Fund 27 (Air Quality Investment Fund), mitigation fees paid by heating furnace manufacturers in order to reimburse Fund 27 for funds used to mitigate excess emissions from sale of non-compliant furnaces pursuant to Rule 1111 (c)(5);
2. Adopt the attached resolution:
  - A. Certifying the Final Environmental Assessment (EA) for Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces; and,
  - B. Amending Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces.

Barry R. Wallerstein, D. Env.  
Executive Officer

## **Background**

The purpose of Proposed Amended Rule 1111 – Reduction of NO<sub>x</sub> Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces (PAR 1111) is to reduce emissions of nitrogen oxides (NO<sub>x</sub>) from gas-fired fan-type residential furnaces. The rule applies to manufacturers, distributors, sales outlets and installers of gas-fired furnaces. Natural gas fired fan-type central furnaces are used in residential and small commercial buildings to provide comfort heating.

Rule 1111 was adopted by the SCAQMD Board in December 1978 setting a NO<sub>x</sub> emission limit for residential furnaces of 40 nanograms per joule (ng/J) of heat output (equivalent to 55 ppm at 3% oxygen) beginning January 1, 1984. Rule 1111 was last amended by the SCAQMD Board in November 2009 to lower the NO<sub>x</sub> emission limit to 14 nanograms per Joule of heat output, which is a 65% reduction from the previous limit of 40 ng/J (55 ppm).

Implementation of lower NO<sub>x</sub> emission limits from the November 2009 rule amendment began in 2012. New mobile home heating units, which were unregulated prior to the 2009 amendment, had to meet a NO<sub>x</sub> limit of 40 ng/J in 2012 with a future limit of 14 ng/J in 2018. The 40 ng/J emission limit for mobile home furnaces was based on burner and control technology used in existing residential furnaces.

All other new residential space heating furnaces were required to meet a 14 ng/J NO<sub>x</sub> limit by October 1, 2016. The 2009 amendment required the three major categories of residential furnace – condensing (high efficiency), non-condensing and weatherized – to meet the new 14 ng/J NO<sub>x</sub> limit by 2014, 2015 and 2016 respectively.

At the time Rule 1111 was amended in 2009, there were no commercially available units meeting the future effective limits. In order to encourage and accelerate technology development, Rule 1111 provided: (1) an incentive for early compliance with the 14 ng/Joule NO<sub>x</sub> emission limit, and (2) through the Board resolution, committed SCAQMD funding to promote and assist residential furnace technology demonstration projects.

The 2009 amendment of Rule 1111 also required a technology assessment and status report to the Board. This technology assessment evaluates both the feasibility of the new lower NO<sub>x</sub> emission limit and the rule implementation schedule. In addition, the amending resolution requires SCAQMD staff to include an analysis of a mitigation fee option that would allow manufacturers to delay compliance with the new NO<sub>x</sub> limit.

Immediately after Rule 1111 was amended in November 2009, the SCAQMD Technology Advancement Office (TAO) initiated a Request for Proposals (RFP) to develop prototype residential furnaces that meet the new 14 ng/J NO<sub>x</sub> limit in Rule 1111. The technology development projects have been completed and the prototype furnaces developed through these four projects demonstrate that the new lower Rule 1111 NO<sub>x</sub> limit is achievable in all of the types of forced air residential heating furnaces produced for the United States market.

## **Public Process**

The rule development effort for PAR 1111 is part of an ongoing process to evaluate low NOx technologies for combustion equipment. To date, SCAQMD staff has held three Rule 1111 Task Force meetings to discuss SCAQMD funded technology demonstration projects, rule implementation, feasibility of compliance dates, and mitigation fee options with representatives from affected manufacturers, trade organizations and other stakeholders. SCAQMD staff has also held numerous separate discussions with furnace and component manufacturers. In addition, a Public Workshop and CEQA Scoping meeting for PAR 1111 were held on May 22, 2014. PAR 1111 was discussed at the Stationary Source Committee on March 21, 2014 and June 20, 2014.

## **Affected Facilities**

Proposed Rule 1111 affects approximately 15 manufacturers and their associated distributors, wholesalers, builders and installers of residential furnaces. The Air Conditioning Heating and Refrigeration Institute (AHRI), the manufacturer's trade organization, indicates that there are currently no manufacturers of fan-type gas-fired residential furnaces within the SCAQMD jurisdiction. However, these companies do maintain regional sales offices and distribution centers in the SCAQMD.

## **Summary of Proposal**

The proposed amendment will provide manufacturers additional time to produce residential furnaces that meet the NOx emission limit of 14 ng/J. Not all manufacturers will be able to produce compliant furnaces by the compliance dates. Proposed Amended Rule 1111 will add an alternate compliance option to the rule. In lieu of meeting the new lower NOx emission limit, PAR 1111 will provide manufacturers of residential furnaces subject to Rule 1111 an option to pay a per unit mitigation fee of \$200 for each condensing furnace and \$150 for each non-condensing, weatherized and mobile home furnace distributed or sold into the SCAQMD.

In addition, the proposed rule will delay the compliance date for condensing (high efficiency) units from October 1, 2014 until April 1, 2015. This delay will provide manufacturers additional time for testing new furnace designs and submitting and receiving approval of alternate compliance plans for selling non-compliant condensing furnaces.

The mitigation fee alternate compliance option can be used for up to 36 months past the applicable compliance date. However, the manufacturer must submit, 60 days prior to the applicable compliance date, a separate alternate compliance application for each 12 month alternate compliance period after the compliance date.

A manufacturer must submit with each alternate compliance application a compliance plan fee and estimate of the number of units distributed or sold into the SCAQMD during the 12 month time period (July 1 to June 30) prior to the applicable compliance date. At the end of each 12 month alternate compliance period the number of units distributed or sold into the SCAQMD is reconciled and the manufacturer pays fees for the actual number of units distributed or sold into the SCAQMD.

## **Emission Reductions**

Based on sales estimates for condensing (high efficiency) furnaces in southern California, PAR 1111 will result in emission reductions forgone of up to 46 pounds per day during the period from October 1, 2014 until April 1, 2015. These foregone emission reductions, from the sale and installation of non-compliant condensing furnaces during those six months cannot be completely mitigated because the mitigation program will not be in effect until sometime between January 1 and April 1, 2015. However, the mitigation program will be able to offset emission reductions forgone for the remainder of the lifetime of these furnaces once mitigation fees are received during the last calendar quarter of 2014 and the first quarter of 2015.

The PAR 1111 mitigation fee will be used to fund existing SCAQMD programs including the clean leaf-blower and lawn mower exchange programs and Carl Moyer and similar programs. These programs can fully mitigate the potential emission reductions forgone. For example, the cost of a low emission leaf blower is about \$180. Each leaf blower purchased and exchanged for an old leaf blower by the SCAQMD will reduce more than six times the annual NO<sub>x</sub> emission reductions forgone due to the purchase of one non-compliant furnace.

## **Cost Effectiveness**

The proposed amendment does not impose additional emission reduction requirements on manufacturers of residential furnaces. The proposed amendment provides an alternate compliance option and delays a compliance date, which is expected to provide regulatory relief for the affected manufacturers and allows additional time to qualify for incentive funds.

## **Key Issues**

SCAQMD staff received comments on the proposed rule at the public workshop, and working group meetings. In addition, stakeholders provided letters summarizing their comments and provided comments at individual meetings with manufacturers. From these comments, the following key issues have been identified:

- Some manufacturers have requested longer delays of compliance dates but one manufacturer has requested no delay of the compliance dates. The proposed 6 month delay for the high efficiency units was first designed to provide a 3 month period whereby manufacturers could submit alternate compliance plans. The additional 3 month delay (to April 1, 2016) was in response to industry concerns addressing implementing new products at the height of the marketing season. Several manufacturers indicated they will be ready to bring their products to the market by the compliance date. In order not to penalize those manufacturers who will meet the compliance date, PAR 1111 allows manufacturers with non-compliant equipment the option of the alternate compliance plan which will provide up to 3 years additional time to meet the standard provided they pay a mitigation fee. In addition, all manufacturers have a 300 day sell through period which enables them to more smoothly transition the introduction of new equipment to the market.

- Some manufacturers have requested the mitigation fee be lower and payment be at the end of a yearlong compliance period. The mitigation fee was set at a level that was determined would be sufficient to bring the cost to the consumer of a non-compliant unit comparable to that of a compliant unit, thus, avoiding a disincentive focused to the new technology. The proposed rule was changed to allow manufacturers to pay mitigation fees at the end of a mitigation fee alternate compliance period.

### **AQMP and Legal Mandates**

The California Health and Safety Code requires the SCAQMD to adopt an Air Quality Management Plan to meet state and federal ambient air quality standards and adopt rules and regulations that carry out the objectives of the AQMP. The Health and Safety Code also requires the SCAQMD to implement all feasible measures to reduce air pollution. This proposed amendment of Rule 1111 provides a 6 month delay in implementing Rule 1111 and Control Measure CMB-03 of the 2007 AQMP. The forgone NO<sub>x</sub> emission reductions from this proposed rule amendment are less than 50 pounds per day and temporary so the rule will help achieve compliance with federal and state ambient air quality standards for ozone, PM<sub>10</sub> and PM<sub>2.5</sub>.

### **California Environmental Quality Act (CEQA) Analysis**

Pursuant to California Environmental Quality Act (CEQA) Guidelines § 15252 and SCAQMD Rule 110, the SCAQMD has prepared an Environmental Assessment (EA) for proposed amended Rule 1111. The Draft EA was released for a 30-day public review and comment period from July 29, 2014 to August 27, 2014. No comment letters were received from the public regarding the Draft EA. The environmental analysis in the Draft EA concluded that proposed amended Rule 1111 would not generate any significant adverse environmental impacts.

Since the release of the Draft EA, minor modifications have been made to the document. However, none of the modifications alter any conclusions reached in the Draft EA, nor provide new information of substantial importance relative to the draft document. As a result, these minor revisions do not require recirculation of the Draft EA pursuant to CEQA Guidelines § 15073.5. Therefore, the Draft EA is now a Final EA and is included as an attachment to this Board package.

### **Socioeconomic Analysis**

Proposed Amended Rule 1111 will allow affected manufacturers to pay a mitigation fee of \$150 to \$200 per unit in lieu of complying with the new NO<sub>x</sub> emission limit. The option to pay a mitigation fee was requested by manufacturers. As such, PAR 1111 does not impose additional costs on the affected manufacturers beyond what was already analyzed for the previous Rule 1111 amendment in 2009 and does not have additional adverse socioeconomic impacts.

**Resource Impacts**

Existing staff resources are adequate to implement the proposed amendments.

**Attachments**

- A. Summary of Proposal
- B. Key Issues and Responses
- C. Rule Development Process
- D. Key Contacts List
- E. Resolution
- F. Proposed Amended Rule
- G. Final Staff Report with Socioeconomic Impact Assessment
- H. Final Environmental Assessment

**ATTACHMENT A**  
**SUMMARY OF PROPOSAL**

**Proposed Amended Rule 1111 – Reduction of NO<sub>x</sub> Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces**

- Delay compliance date for condensing (high efficiency) units 6 months from October 1, 2014 until April 1, 2015
- Allow up to three years delay with mitigation fee alternate compliance plan
- Mitigation fees of \$200 for condensing units and \$150 for others
- Mitigation fee option requires submittal and approval of mitigation fee alternate compliance plan and payment of mitigation fees at end of compliance period

## ATTACHMENT B

### KEY ISSUES AND RESPONSES

#### Proposed Amended Rule 1111 – Reduction of NO<sub>x</sub> Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces

**Issue – Compliance Schedule:** Some manufacturers requested an additional 6 month delay of the condensing furnace compliance date and others requested delays of all compliance dates. One manufacturer has requested no delay of the compliance dates.

**Response:** *Proposed Amended Rule (PAR) 1111 provides manufacturers flexibility with more than one year of delay and time for product development and testing, as well as for training of distributors and installers. PAR 1111 allows up to three years of delay for any category of furnace for all manufacturers and provides the industry-requested alternate compliance option of a mitigation fee in lieu of meeting the emission limit in the rule. The 10 month sell through period also provides manufacturers flexibility in deciding when to introduce rule compliant furnaces.*

**Issue – Mitigation Fee Cost and Payment Schedule:** Some manufacturers have requested the mitigation fee be lower and payment be at the end of a year compliance period.

**Response:** *The mitigation fee is based both on the high end of the range of expected cost to producing compliant furnaces and provides sufficient funds to pay for emission reduction projects over the lifetime of a furnace.*

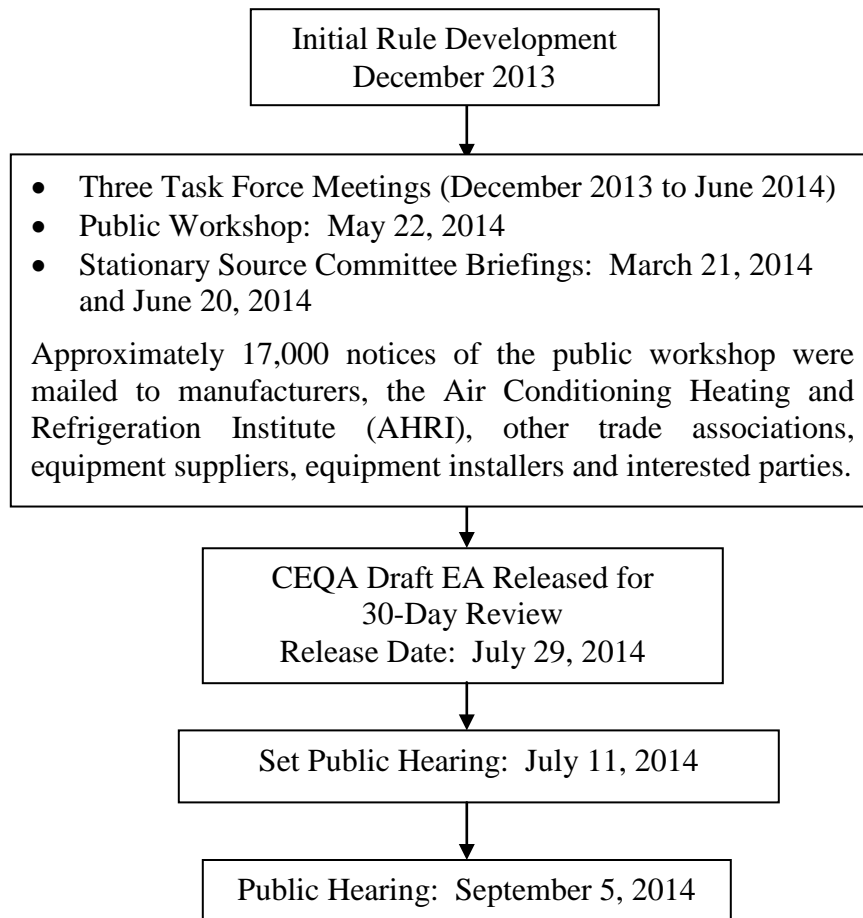
*The mitigation fee compliance option has been changed so that mitigation fees are paid at the end of a mitigation fee alternate compliance period.*



## ATTACHMENT C

### RULE DEVELOPMENT PROCESS

#### Proposed Amended Rule 1111 – Reduction of NO<sub>x</sub> Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces



**Ten (10) months spent in rule development.**

**ATTACHMENT D**  
**KEY CONTACTS LIST**

Air Conditioning, Heating and Refrigeration Institute (AHRI)  
Beckett Gas  
Carrier/ICP  
Goodman  
GTI  
Ingersoll Rand/Trane  
Lennox  
Nordyne  
Rheem  
SEMPRA/The Gas Company

## ATTACHMENT E

### RESOLUTION NO. 2014 -

**A Resolution of the South Coast Air Quality Management District (SCAQMD) Governing Board amending Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces.**

**A Resolution of the SCAQMD Governing Board certifying the Final Environmental Assessment for Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces.**

**WHEREAS**, the SCAQMD Governing Board has determined with certainty that Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces, is a “project” pursuant to the California Environmental Quality Act (CEQA); and

**WHEREAS**, the SCAQMD has had its regulatory program certified pursuant to Public Resources Code § 21080.5 and has conducted CEQA review and analysis pursuant to such program (SCAQMD Rule 110); and

**WHEREAS**, SCAQMD staff has prepared a Draft Environmental Assessment (EA) pursuant to its certified regulatory program and pursuant to CEQA Guidelines §15252, setting forth the potential environmental consequences of Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces; and

**WHEREAS**, the Draft EA was circulated for 30-day public review and comment period from July 29, 2014 to August 27, 2014; and

**WHEREAS, WHEREAS**, no comment letters were received relative to the analysis presented in the Draft EA and the Draft EA has been revised such that it is now a Final EA; and

**WHEREAS**, it is necessary that the adequacy of the Final EA, including responses to comments, be determined by the SCAQMD Governing Board prior to its certification; and

**WHEREAS**, the SCAQMD is not required to prepare Findings, a Statement of Overriding Considerations, or a Mitigation Monitoring Plan because the proposed project is not expected to generate significant adverse environmental impacts; and

**WHEREAS**, the SCAQMD Governing Board voting on Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces has reviewed and considered the Final EA prior to its certification; and

**WHEREAS**, the SCAQMD Governing Board finds and determines, taking into consideration the factors in § (d)(4)(D) of the Governing Board Procedures (to be codified as Section 30.5(4)(D) of the Administrative Code), that the modifications which have been made to Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces, since notice of public hearing was published do not significantly change the meaning of the proposed project within the meaning of Health and Safety Code § 40726 and would not constitute significant new information requiring recirculation of the Draft CEQA document pursuant to CEQA Guidelines § 15073.5; and

**WHEREAS**, California Health and Safety Code § 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; and

**WHEREAS**, the SCAQMD Governing Board obtains its authority to adopt, amend, or repeal rules and regulations from §§ 39002, 40000, 40001, 40440, 40441, 40702, 40725 through 40728, 41508, and 41700 of the California Health and Safety Code; and

**WHEREAS**, the SCAQMD Governing Board has determined that there is a problem that Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces will help alleviate by delaying the NOx emission limit compliance date and providing an alternate compliance option; and

**WHEREAS**, the SCAQMD Governing Board has determined that a need exists to amend Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces to delay the NOx emission limit compliance dates and provide an alternate compliance option; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces, as proposed is written or displayed so that its meaning can be easily understood by the persons directly affected by it; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired,

Fan-Type Central Furnaces, as proposed is in harmony with, and not in conflict with or contradictory to, existing federal or state statutes, court decisions, or regulations; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces, as proposed does not impose the same requirements as any existing state or federal regulation and the proposed rule is necessary and proper to execute the powers and duties granted to, and imposed upon, the District; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces, as proposed, references the following statutes which the SCAQMD hereby implements, interprets or makes specific: Health and Safety Code 40001(a) (rules to meet air quality standards); 40440(a) (rules to carry out the plan); 40702 (adoption of rules and regulations); and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces does not make an existing emission limit or standard more stringent, and therefore the requirements of Health and Safety Code § 40727.2 are satisfied; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces will not result in increased costs; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces will not result in emission reductions, and therefore no incremental cost analysis is required under Health and Safety Code § 40920.6; and

**WHEREAS**, manufacturers of heating furnaces regulated by Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces may distribute and sell into the SCAQMD less or more than the number of furnaces estimated pursuant to each one year mitigation fee alternate compliance plan; and

**WHEREAS**, heating furnaces regulated by Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces may be used for more than twenty years; and

**WHEREAS**, a public hearing has been properly noticed in accordance with the provisions of Health and Safety Code § 40725; and

**WHEREAS**, the SCAQMD Governing Board has held a public hearing in accordance with all provisions of law; and

**WHEREAS**, the SCAQMD Governing Board specifies the Manager of Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces as the custodian of the documents or other materials which constitute the record of proceedings upon which the adoption of this proposed project is based, which are located at the South Coast Air Quality Management District, 21865 Copley Drive, Diamond Bar, California; and

**WHEREAS**, the SCAQMD Governing Board has determined that Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces, should be adopted for the reasons contained in the Final Staff Report; and

**NOW, THEREFORE, BE IT RESOLVED**, that the SCAQMD Governing Board does hereby certify that the Final EA for Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces, including responses to comments, was completed in compliance with CEQA and Rule 110 provisions; and that the Final EA was presented to the Governing Board, whose members reviewed, considered and approved the information therein prior to acting on PAR1111; and

**BE IT FURTHER RESOLVED**, that because no significant adverse environmental impacts were identified as a result of implementing Proposed Amended Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces, Findings, a Statement of Overriding Considerations, and a Mitigation Monitoring Plan are not required; and

**BE IT FURTHER RESOLVED**, that the South Coast Air Quality Management District Board directs the Executive Officer to fund NOx emission reduction projects or series of projects that will offset and mitigate the more than 20 years of excess emissions from sale of non-compliant heating furnaces under Rule 1111 mitigation fee alternate compliance plans using Fund 27 – Air Quality Investment Fund; and

**BE IT FURTHER RESOLVED**, that the South Coast Air Quality Management District Board directs the Executive Officer to recognize upon receipt mitigation fees paid by heating furnace manufacturers into Fund 27 (Air Quality Investment Fund) in order to reimburse Fund 27 for amounts used for projects to mitigate excess emissions from sale of non-compliant furnaces pursuant to Proposed Amended Rule 1111 (c)(5); and

**BE IT FURTHER RESOLVED**, that the South Coast Air Quality Management District Board requests that Proposed Amended Rule 1111 be submitted into the State Implementation Plan; and

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby directed to forward a copy of this Resolution and Proposed Amended Rule 1111 to the California Air Resources Board for approval and subsequent submittal to the U.S. Environmental Protection Agency for inclusion into the State Implementation Plan; and

**BE IT FURTHER RESOLVED**, that the SCAQMD Governing Board does hereby adopt, pursuant to the authority granted by law, Rule 1111 - Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces, as set forth in the attached and incorporated herein by reference.

Dated: \_\_\_\_\_

\_\_\_\_\_

Clerk of the Board

## ATTACHMENT F

(Adopted December 1, 1978)(Amended July 8, 1983)(Amended November 6, 2009)

(Draft — August 6, 2014 date of adoption)

### **PROPOSED AMENDED RULE 1111. — REDUCTION OF NO<sub>x</sub> EMISSIONS FROM NATURAL-GAS-FIRED, FAN- TYPE CENTRAL FURNACES**

(a) Purpose and Applicability

The purpose of this rule is to reduce NO<sub>x</sub> emissions from natural gas-fired, fan-type central furnaces, as defined in this rule. This rule applies to manufacturers, distributors, sellers and installers of residential and commercial fan-type central furnaces, requiring either single-phase or three-phase electric supply, used for comfort heating with a rated heat input capacity of less than 175,000 BTU per hour, or, for combination heating and cooling units, a cooling rate of less than 65,000 BTU per hour.

(b) Definitions

- (1) ANNUAL FUEL UTILIZATION EFFICIENCY (AFUE) is defined in Section 10.1 of Code of Federal Regulations, Title 10, Part 430, Subpart B, Appendix N.
- (2) BTU means British thermal unit or units.
- (3) CONDENSING FURNACE means a high-efficiency furnace that uses a second heat exchanger to extract the latent heat in the flue gas by cooling the combustion gasses to near ambient temperature so that water vapor condenses in the heat exchanger, is collected and drained.
- (4) FAN TYPE CENTRAL FURNACE is a self-contained space heater providing for circulation of heated air at pressures other than atmospheric through ducts more than 10 inches in length that have:
  - (A) a RATED HEAT INPUT CAPACITY of less than 175,000 BTU per hour; or
  - (B) for combination heating and cooling units, a cooling rate of less than 65,000 BTU per hour.
- (5) HEAT INPUT means the higher heating value of the fuel to the furnace measured as BTU per hour.



- (6) NO<sub>x</sub> EMISSIONS means the sum of nitrogen oxide and nitrogen dioxide (oxides of nitrogen) in the flue gas, collectively expressed as nitrogen dioxide.
  - (7) RATED HEAT INPUT CAPACITY means the gross HEAT INPUT of the combustion device.
  - (8) RESPONSIBLE OFFICIAL means:
    - (A) For a corporation: a president or vice-president of the corporation in charge of a principal business function or a duly authorized person who performs similar policy-making functions for the corporation, or
    - (B) For a partnership or sole proprietorship: general partner or proprietor, respectively.
  - (9) SINGLE FIRING RATE means the burners and control system are designed to operate at only one fuel input rate and the control system cycles burners between the maximum heat output and no heat output.
  - (10) USEFUL HEAT DELIVERED TO THE HEATED SPACE is the AFUE (expressed as a fraction) multiplied by the heat input.
  - (11) VARIABLE FIRING RATE means the burners and control system are designed to operate at more than one fuel input rate and the control system cycles burners between two or more heat output rates and no heat output.
  - (12) WEATHERIZED means designed for installation outside of a building, equipped with a protective jacket and integral venting, and labeled for outdoor installation.
- (c) Requirements
- (1) A manufacturer shall not, after January 1, 1984, manufacture or supply for sale or use in the South Coast Air Quality Management District natural-gas-fired, fan-type central furnaces, unless such furnaces meet the requirements of paragraph (c)(3).
  - (2) A person shall not, after April 2, 1984, sell or offer for sale within the South Coast Air Quality Management District natural-gas-fired, fan-type central furnaces unless such furnaces meet the requirements of paragraph (c)(3).
  - (3) Natural-gas-fired, fan-type central furnaces shall:

- (A) not emit more than 40 nanograms of oxides of nitrogen (calculated as NO<sub>2</sub>) per joule of useful heat delivered to the heated space; and
  - (B) be certified in accordance with subdivision (d) of this rule.
- (4) On or after October 1, 2012, a person shall not manufacture, supply, sell, offer for sale, or install, for use in the South Coast Air Quality Management District, natural-gas-fired, fan-type central furnaces subject to this rule, unless such furnace complies with the applicable emission limit and compliance date set forth in Table 1 and is certified in accordance with subdivision (d) of this rule.

Table 1 – Furnace NOx Limits and Compliance Schedule

Compliance Date	Equipment Category	NOx Emission Limit (nanograms/Joule *)
October 1, 2012	Mobile Home Furnace	40
<del>October</del> <u>April 1, 2014</u> <del>2015</del>	Condensing Furnace	14
October 1, 2015	Non-condensing Furnace	14
October 1, 2016	Weatherized Furnace	14
October 1, 2018	Mobile Home Furnace	14

\* Nanograms of oxides of nitrogen (calculated as NO<sub>2</sub>) per joule of useful heat delivered to the heated space

- (5) Any manufacturer of fan-type central furnaces regulated by this rule may elect to pay a per unit mitigation fee of \$200 for each condensing furnace and \$150 for each non-condensing, weatherized or mobile home furnace distributed or sold into the SCAQMD in lieu of meeting the 14 nanogram/Joule NOx emission limit in Table 1 of paragraph (c)(4) of this rule. A manufacturer may elect to pay the per unit mitigation fee for a time period of no more than 36 months after the applicable compliance date in Table 1 of paragraph (c)(4). A manufacturer shall submit an alternate compliance plan for each 12 month time period after the applicable compliance date during which the manufacturer elects to pay the mitigation fee in lieu of meeting the NOx emission limit.
- (A) Any manufacturer electing to comply using this mitigation fee option shall submit to the SCAQMD an alternate compliance plan no later than 60 days prior to the applicable compliance date that includes the following:

- (i) a letter with the name of the manufacturer requesting the mitigation fee compliance option signed by a responsible official identifying the category of fan-type central furnaces and the 12 month alternate compliance period that the mitigation fees cover;
- (ii) an estimate of the quantity of applicable Rule 1111 fan-type central furnaces to be distributed or sold into the SCAQMD during the alternate compliance period, which estimate shall be based on total distribution and sales records or invoices of condensing, non-condensing, weatherized or mobile home fan-type central furnaces that were distributed or sold into the SCAQMD during the 12 month period of July 1 to June 30 prior to the applicable compliance date, along with supporting documentation;
- (iii) a completed SCAQMD Form 400A with company name, identification that application is for an alternate compliance plan (section 7 of form), identification that the request is for the Rule 1111 mitigation fee compliance option (section 9 of form), and signature of the responsible official;
- (iv) a check for payment of the alternate compliance plan filing fee (Rule 306, section (c)), ~~and~~
- ~~(v) an additional separate check for payment of the mitigation fees for the applicable 12 month alternate compliance period.~~
- (B) The manufacturer shall submit to the Executive Officer a report signed by the responsible official for the manufacturer identifying by model number the quantity of Rule 1111 fan-type central furnaces actually distributed or sold into SCAQMD and a check for payment of mitigation fees for the applicable 12 month alternate compliance period for the quantity of applicable Rule 1111 fan-type central furnaces distributed or sold into the SCAQMD during the alternate compliance period. ~~If the actual quantity of units distributed or sold into SCAQMD exceed the quantity estimated pursuant to subparagraph (c)(5)(A)(ii), the manufacturer shall submit, along with the report, payment of mitigations fees for each such additional unit in excess of the~~

~~estimated quantity. If the actual quantity of units distributed or sold into SCAQMD are less than the estimated quantity pursuant to subparagraph (c)(5)(A)(ii), the manufacturer may submit, along with the report, a request for reimbursement of mitigation fees paid for each additional unit in excess of the actual quantity distributed or sold into SCAQMD. The report, and the payment of additional mitigation fees, and the request for reimbursement must be submitted to the SCAQMD no later than thirty (30) days after the end of each 12-month mitigation fee alternate compliance period.~~

(d) Certification

- (1) The manufacturer shall have each appliance model tested in accordance with the following:
  - (A) Oxides of nitrogen measurements, test equipment, and other required test procedures shall be in accordance with AQMD Method 100.1.
  - (B) Operation of the furnace shall be in accordance with the procedures specified in Section 4.0 of Code of Federal Regulations, Title 10, Part 430, Subpart B, Appendix N.
- (2) One of the two formulas shown below shall be used to determine the nanograms of oxides of nitrogen per joule of useful heat delivered to the heated space:

$$N = \frac{4.566 \times 10^4 \times P \times U}{H \times C \times E}$$

$$N = \frac{3.655 \times 10^{10} \times P}{(20.9 - Y) \times Z \times E}$$

Where:

N = nanograms of emitted oxides of nitrogen per joule of useful heat.

P = concentration (ppm volume) of oxides of nitrogen in flue gas as tested.

U = volume percent CO<sub>2</sub> in water-free flue gas for stoichiometric combustion.

H = gross heating value of fuel, BTU/cu.ft. (60°F, 30-in. Hg).

C = measured volume percent of CO<sub>2</sub> in water-free flue gas, assuming complete combustion and no CO present.

E = AFUE, percent (calculated using Table 2).

Y = volume percent of O<sub>2</sub> in flue gas.

Z = heating value of gas, joules/cu. meter (0.0°C, 1 ATM).

- (3) At least 120 days prior to the date a furnace model is first shipped to a location in the AQMD for use in the District, the manufacturer shall submit to the Executive Officer the following:
- (A) A statement that the model is in compliance with subdivision (c). (The statement shall be signed by a responsible official and dated, and shall attest to the accuracy of all statements.)
  - (B) General Information
    - (i) Name and address of manufacturer.
    - (ii) Brand name.
    - (iii) Model number, as it appears on the furnace rating plate.
  - (C) A description of the furnace and specifications for each model being certified.
  - (D) Executive Officer approved emission test protocol and emission test results verifying compliance with the applicable NO<sub>x</sub> limit specified in Table 1.
- (e) Identification of Compliant Units
- (1) The manufacturer of the furnace complying with subdivisions (c) and (d) shall display the following on the shipping container label and rating plate of the furnace:
    - (A) Model number;
    - (B) Heat input capacity;
    - (C) Applicable NO<sub>x</sub> emission limit in Table 1; and
    - (D) Date of manufacture or date code.
  - (2) Any non-certified furnace shipped to a location in the South Coast Air Quality Management District for distribution or sale outside of the District shall have a label on the shipping container identifying the furnace as not certified for use in the District.
- (f) Enforcement
- The Executive Officer may periodically conduct such tests as are deemed necessary to ensure compliance with subdivision (c), (d), (e) and (h).

(g) Exemptions

- (1) The provisions of this rule shall not apply to furnaces installed in mobile homes before October 1, 2012.
- (2) For furnaces manufactured, purchased and delivered to the South Coast Air Quality Management District prior to the applicable compliance date in Table 1, any person may, until 300 days after the applicable compliance date, sell, offer for sale, or install such a furnace in the District, so long as the furnace meets the requirements of paragraph (c)(3) and subdivisions (d) and (e).

(h) Rebate Incentives for Early Compliance

Any manufacturer of natural gas-fired, fan-type central furnaces subject to this rule that distributes and sells into the District furnaces that comply with the 14 nanograms/Joule emission limit 90 days prior to the applicable compliance date in Table 1 of paragraph (c)(4) may submit a compliance plan for early compliance to the Executive Officer and to receive on a first-come first-served basis from the AQMD a rebate payment of \$75 for each 14 nanograms/Joule certified furnace and \$90 for each high efficiency 14 nanograms/Joule certified furnace with AFUE of 90% or greater distributed and sold into the District, provided funds are available on the date documentation on the number of units distributed and sold is submitted to the AQMD. Total rebate payments to all manufacturers shall not exceed \$3,000,000.

(i) Technology Assessment

On or before April 1, 2013, the Executive Officer shall conduct a technology assessment and shall report to the Governing Board on the status of manufacturers' progress towards compliance with the 14 nanograms/Joule emission limit for nitrogen oxides.

# ATTACHMENT G

## SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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### Staff Report

### Proposed Amended Rule 1111 – Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces

September 5, 2014

#### Deputy Executive Officer

Planning, Rule Development, and Area Sources  
Elaine Chang, DrPH

#### Assistant Deputy Executive Officer

Planning, Rule Development, and Area Sources  
Philip M. Fine, Ph. D.

#### Planning and Rules Manager

Planning, Rule Development, and Area Sources  
Joe Cassmassi

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Author:

Wayne Barcikowski – Air Quality Specialist

Reviewed by:

Gary Quinn, P.E. – Program Supervisor  
Ruby Fernandez – Senior Deputy District Counsel

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
GOVERNING BOARD**

Chairman:                               WILLIAM A. BURKE, Ed.D.  
Speaker of the Assembly Appointee

Vice Chairman:                       DENNIS YATES  
Mayor, Chino  
Cities of San Bernardino County

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County of Los Angeles

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Supervisor, Fourth District  
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City of Los Angeles Representative

MICHAEL A. CACCIOTTI  
Councilmember, South Pasadena  
Cities of Los Angeles County/Eastern Region

JOSIE GONZALES  
Supervisor, Fifth District  
County of San Bernardino

JOSEPH K. LYOU, Ph.D.  
Governor's Appointee

JUDITH MITCHELL  
Mayor, Rolling Hills Estates  
Cities of Los Angeles County/Western Region

SHAWN NELSON  
Supervisor, Fourth District  
County of Orange

DR. CLARK E. PARKER, SR.  
Senate Rules Appointee

MIGUEL A. PULIDO  
Mayor, Santa Ana  
Cities of Orange County

**EXECUTIVE OFFICER:**

BARRY R. WALLERSTEIN, D.Env.



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## **CHAPTER 1: BACKGROUND**

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**INTRODUCTION**

**REGULATORY HISTORY**

**EQUIPMENT AND PROCESS**

**TECHNOLOGY ASSESSMENT**

**AFFECTED INDUSTRIES**

**PUBLIC PROCESS**

## INTRODUCTION

The purpose of the current Rule 1111 – Reductions of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces is to reduce emissions of nitrogen oxides (NOx) from gas-fired fan-type residential space heating furnaces with heat input ratings between 50,000 and 175,000 British thermal units per hour (Btu/hr). The rule applies to manufacturers, distributors, sales outlets and installers of such furnaces. The rule also requires manufacturers to certify that each furnace model offered for sale in the SCAQMD complies with the emission limit. The rule requires emissions testing using specific test methods approved by the SCAQMD and U.S. EPA. Most single family homes, many multi-unit residences and some small commercial buildings in the SCAQMD use this type of space heating equipment.

## REGULATORY HISTORY

Rule 1111 was adopted by the SCAQMD Governing Board in December 1978, addressing all sizes of space heating furnaces. The original rule required all residential and commercial space heating furnaces to meet a NOx emission limit of 40 nanograms per Joule (ng/J) of heat output (equivalent to 55 ppm at a reference level of 3% oxygen) beginning January 1, 1984. At the December 1978 rule adoption Hearing, a rule requirement that all space heating furnaces meet a 12 ng/J NOx emission limit by 1995 was considered by the Governing Board but not adopted.

Rule 1111 was amended in July 1983 in order to limit applicability to units sized for residences and exempted larger commercial space heaters. The rule amendment limited applicability to furnaces with a heat input of less than 175,000 Btu per hour, or for combination heating and cooling units, a cooling rate of less than 65,000 Btu per hour. The July 1983 amendment also exempted units manufactured for use in mobile homes (manufactured housing), revised the definition of efficiency, and clarified testing procedures.

In November 2009, Rule 1111 was amended to be consistent with the objectives of Control Measure CMB-03 of the 2007 Air Quality Management Plan (AQMP). The 2009 amendment established a new lower NOx emission limit of 14 ng/J (20 ppm at reference level of 3% oxygen) for residential furnaces, which reflects a 65% reduction from the then current limit of 40 ng/J (55 ppm).

Implementation of lower NOx emission limits from the November 2009 rule amendment began in 2012. New mobile home heating units, which were unregulated prior to the 2009 amendment, had to meet a NOx limit of 40 ng/J in 2012 with a future limit of 14 ng/J in 2018. The 40 ng/J emission limit for mobile home furnaces was based on burner and control technology used in existing residential furnaces.

All other new residential space heating furnaces were required to meet a 14 ng/J NOx limit by October 1, 2016. The 2009 amendment required the three major categories of residential furnace – condensing (high efficiency), non-condensing and weatherized – to meet the new 14 ng/J NOx limit by 2014, 2015 and 2016 respectively.

The 2009 amendment to Rule 1111 also made a number of other changes to the rule including updating references to test methods for determining compliance with rule emission limits and providing more specificity in the labeling requirements. To facilitate the depletion of existing inventories and to ensure smooth transition to the new limits, Rule 1111 also provided a temporary 10-month exemption (a sell-through period) for units manufactured before the applicable future compliance date and delivered into the SCAQMD prior to the compliance date.

At the time Rule 1111 was amended in 2009, there were no commercially available units meeting the future effective limits. In order to encourage and accelerate technology development, Rule 1111 provided an incentive for early compliance with the 14 ng/Joule NOx emission limit. Companies that deliver 14 ng/J furnaces into the SCAQMD prior to the applicable compliance date can elect to receive a payment of \$75 for each standard efficiency furnace and \$90 for each high-efficiency unit sold and delivered into the SCAQMD 90 days prior to the applicable compliance date. These manufacturer rebates would result in savings of \$150 to \$350 to consumers because of cost markups in the supply chain. This early compliance program is funded by the SCAQMD Rule 1121 Mitigation Program and provides up to \$3,000,000 for the residential furnace rebate program. As funds are limited, payments for early compliance are on a first-come first-served basis. To promote and assist the development of compliant furnaces, the resolution for the 2009 rule amendment also committed SCAQMD funding for residential furnace technology demonstration projects.

The 2009 amendment of Rule 1111 also required a technology assessment and status report to the Governing Board. This technology assessment was to evaluate both the feasibility of the new lower NOx emission limit and the rule implementation schedule. In addition, the amending resolution requires SCAQMD staff to include an analysis of a mitigation fee option that would allow manufacturers to delay compliance with the new NOx limit.

Immediately after Rule 1111 was amended in November 2009, the SCAQMD Technology Advancement Office (TAO) initiated a Request for Proposals (RFP) to develop prototype residential furnaces that meet the new 14 ng/J NOx limit in Rule 1111. The technology development projects have been completed and the prototype furnaces developed through these four projects demonstrate that the new lower Rule 1111 NOx limit is achievable in all of the types of forced air residential heating furnaces produced for the United States market.

## **EQUIPMENT AND PROCESS**

Fan-type gas-fired furnaces heat a building by circulating air from inside the building through the furnace. In a fan-type furnace, air is heated when it passes through a heat exchanger. Combustion gases heat up the inside of the heat exchanger and building air moving past the outside of the heat exchanger removes heat from the outside surface. A blower (fan) pulls air through one or more intake ducts and pushes the air past the heat exchanger and through another set of ducts which direct the heated air to different parts of the building. The heated air circulates through the building before it is again pulled into the intake ducts and heated. This process continues until a specific temperature is detected by a thermostat in the building which

then shuts off the furnace. When the temperature at the thermostat goes below a set point, the thermostat sends a signal for the furnace to turn on.

## TECHNOLOGY ASSESSMENT

Immediately after Rule 1111 was amended in November 2009, the SCAQMD Technology Advancement Office (TAO) initiated a Request for Proposals (RFP) to develop prototype residential furnaces that meet the new 14 ng/J NO<sub>x</sub> limit in Rule 1111. A request for proposals was issued in February 2010 and TAO staff selected four bids for funding, including two furnace manufacturers, one burner manufacturer and a research institute familiar with residential furnaces. The total cost of the four projects was \$1,447,737 with \$447,737 provided by The Gas Company and \$50,000 provided by the San Joaquin Valley Unified Air Pollution Control District.

The four proposals were approved by the SCAQMD Governing Board at the June 2010 meeting. The four projects demonstrate multiple furnace types (i.e., standard efficiency, high efficiency, a range of heat outputs and variable firing rates versus on-off operation). The selected projects are summarized in the following list.

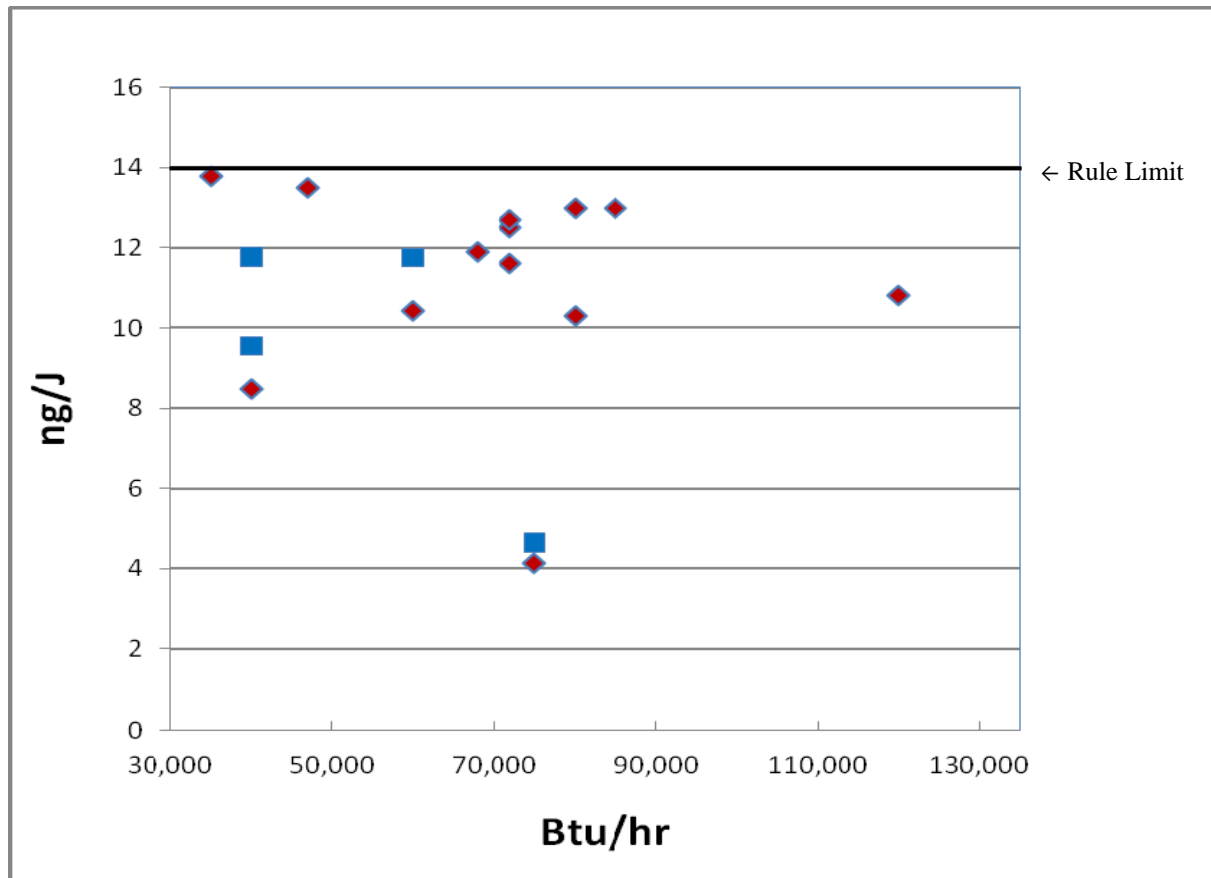
**Figure 1 – Summary of Rule 1111 Technology Demonstration Projects**

<b>Project</b>	<b>Award Amount</b>	<b>Scope</b>
Beckett Gas	\$379,386	Two furnaces: one condensing and one non-condensing
GTI	\$450,000	One furnace each for five manufacturers: Carrier, Johnson Controls, Lennox, Rheem and Thermo Products
Ingersoll Rand	\$368,261	Two furnaces: each two-stage condensing furnaces with one average and one higher heat output
Nordyne	\$250,090	Three furnaces with different firing rates: one single-stage (on/off), one two-stage (high/low/off), and one modulating (low to high and off)

Because of the confidential and proprietary nature of much of the information in the project reports, staff is not able to provide information that includes furnace and manufacturer specific details about the projects in this assessment. However, the results of the four technology demonstration projects indicate that the 14 ng/J emission limit in Rule 1111 is achievable in both standard and high efficiency furnaces (condensing furnaces) with single or variable firing

rates. With the exception of one furnace that did not pass safety testing by the end of the project, the contractors and their prototype furnaces achieved the project objectives of meeting the NOx emissions limit and passing initial safety tests.

**Figure 2 – Prototype Furnace NOx Emissions (ng/J) \***



\* Standard and high efficiency units are identified by squares and diamonds respectively.

The prototype furnaces developed through these four projects demonstrate that the new lower Rule 1111 NOx limit is achievable in all of the types of forced air residential heating furnaces produced for the United States market. In addition, testing indicates that furnaces with the new burners developed for the projects can also meet industry safety requirements. However, there remain issues relating to product design, materials of construction, combustion control, and manufacturing that each company must resolve. Now that prototype furnaces have been developed, the next steps for each manufacturer would be to complete the product design and select materials of construction, combustion controls and manufacture of the new units. Staff also expects that the technology developed for these residential furnaces will be applicable to commercial sized furnaces that will be regulated by Proposed Rule 1111.1. Smaller commercial forced air furnaces use the same basic design as residential furnaces.

## **AFFECTED INDUSTRIES**

Proposed Amended Rule 1111 affects manufacturers (NAICS 333) and distributors and wholesalers (NAICS 423) of residential furnaces. Because heating units regulated by the rule are used in most residential and many commercial settings for heating small buildings, construction and building contractors are also affected by PAR 1111. The Air Conditioning Heating and Refrigeration Institute (AHRI), the major manufacturer's trade organization, indicates that there are no manufacturers of fan-type gas-fired residential furnaces in the SCAQMD. However, these companies do maintain regional sales offices and distribution centers in the SCAQMD and there are manufacturers of other types of heating furnaces in the SCAQMD.

## **PUBLIC PROCESS**

The rule development effort for PAR 1111 is part of an ongoing effort to evaluate low NOx technologies for combustion equipment. To date, SCAQMD staff has held three Rule 1111 Task Force meetings to discuss SCAQMD funded technology demonstration projects, rule implementation, feasibility of compliance dates, and mitigation fee options with representatives from affected manufacturers, trade organizations and other stakeholders. SCAQMD staff has also held numerous separate discussions with furnace and component manufacturers. In addition, a Public Workshop and CEQA Scoping meeting for PAR 1111 were held on May 22, 2014. PAR 1111 was discussed at the Stationary Source Committee on March 21, 2014 and June 20, 2014.

## **CHAPTER 2: SUMMARY OF PROPOSED AMENDED RULE 1111**

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### **PROPOSED AMENDMENTS TO RULE REQUIREMENTS**



## PROPOSED AMENDMENTS TO RULE REQUIREMENTS

SCAQMD staff has proposed to amend Rule 1111 in order to provide manufacturers additional time to produce residential furnaces that meet the NO<sub>x</sub> emission limit of 14 ng/J. Not all manufacturers will be able to produce compliant furnaces by the compliance dates. Proposed Amended Rule 1111 will add an alternate compliance option to the rule. In lieu of meeting the new lower NO<sub>x</sub> emission limit, PAR 1111 will provide manufacturers of residential furnaces subject to Rule 1111 an option to pay a per unit mitigation fee of \$200 for each condensing furnace and \$150 for each non-condensing, weatherized and mobile home furnace distributed or sold into the SCAQMD.

In addition, the proposed rule will delay the compliance date for condensing (high efficiency) units from October 1, 2014 until April 1, 2015. This delay will provide manufacturers additional time for testing new furnace designs and submitting and receiving approval of alternate compliance plans for non-compliant condensing furnaces.

**Table 1 – Furnace NO<sub>x</sub> Limits and Compliance Schedule**

Compliance Date	Equipment Category	NO <sub>x</sub> Emission Limit (nanograms/Joule)
October 1, 2012	Mobile Home Furnace	40
<u>April 1, 2015</u> <del>October 1, 2014</del>	Condensing Furnace	14
October 1, 2015	Non-condensing Furnace	14
October 1, 2016	Weatherized Furnace	14
October 1, 2018	Mobile Home Furnace	14

The mitigation fee alternate compliance option can be used for up to 36 months past the applicable compliance date in Table 1 of section (c) of the rule. However, the manufacturer must submit, 60 days prior to the applicable compliance date, a separate alternate compliance application for each 12 month alternate compliance period after the compliance date.

A manufacturer must submit with each alternate compliance application a compliance plan fee and ~~total mitigation fees based on the~~ the number of units that were distributed or sold into the SCAQMD during the 12 month time period (July 1 to June 30) prior to the applicable compliance date. At the end of each 12 month alternate compliance period the number of units distributed or sold into the SCAQMD is reconciled and the manufacturer pays fees for ~~additional the number of units distributed or sold into the SCAQMD in excess of the quantity estimated in the alternate compliance plan~~ additional for the alternate compliance period. ~~The manufacturer may also request a refund of mitigation fees paid if the number of units distributed and sold into the SCAQMD is less than the quantity of units estimated for the alternate compliance period.~~

Emission reductions funded through the mitigation fee alternative compliance option can be achieved through a variety of projects including but not limited to replacement of commercial leaf blowers with low emission or electric units, replacement of gas powered lawnmowers with electric mowers, automobile scrapping, co-funding with Carl Moyer or similar programs or purchasing of emission reduction credits or mobile source emission reduction credits for the relevant time period.

Of the potential projects for achieving emission reductions, SCAQMD staff is proposing to use Rule 1111 alternate compliance mitigation fees to fund replacement of gasoline-powered commercial leaf blowers and lawn mowers with low emission or electric units or any other projects with equivalent or better emission reduction potential. The leaf blower and lawn mower exchange programs in the SCAQMD has been very successful and can achieve the necessary emission reductions. In previous years, SCAQMD has exchanged 1,500 leaf blowers per year and the demand for low emission leaf blowers is much greater. Staff estimates that the maximum number of non-compliant furnaces that would be sold pursuant to the mitigation fee compliance option is 45,000 units in 2016. For illustration purposes, in order to mitigate the sale of this number of non-compliant furnaces, the SCAQMD would have to exchange about 8,000 low emission leaf blowers every 5 years for 20 years. Staff has calculated that the expected mitigation fees received will be sufficient to fund the exchange of this number of leaf blowers and that there is sufficient demand to support the exchange.

## **CHAPTER 3: IMPACT ASSESSMENT**

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**IMPACT ANALYSIS**

**COST EFFECTIVENESS**

**CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ANALYSIS**

**SOCIOECONOMIC ASSESSMENT**

~~**DRAFT FINDINGS UNDER CALIFORNIA HEALTH AND SAFETY  
-CODE SECTION 40727**~~

**INCREMENTAL COST-EFFECTIVENESS**

**COMPARATIVE ANALYSIS**

## **IMPACT ANALYSIS**

According to the Air Conditioning Heating and Refrigeration Institute (AHRI), the manufacturer's trade organization, there are currently no facilities manufacturing fan-type gas-fired residential furnaces in the SCAQMD. However, affected companies do maintain regional sales offices and distribution centers in the SCAQMD and these offices and centers will have to assure that only compliant or mitigation plan units are sold for installation in the SCAQMD.

Annual average NO<sub>x</sub> emissions from residential heating using natural gas were estimated in the 2007 Air Quality Management Plan at 9.7 tons per day in 2002 and 11.1 tons/days in 2023. As most NO<sub>x</sub> emissions occur between October and May, daily emissions in these months are significantly higher.

Based on sales estimates for condensing (high efficiency) furnaces in southern California, PAR 1111 will result in emission reductions forgone of up to 46 pounds per day during the period from October 1, 2014 until April 1, 2015. These foregone emission reductions, from the sale and installation of non-compliant condensing furnaces during those six months cannot be completely mitigated because the mitigation program will not be in effect until sometime between January 1 and April 1, 2015. However, the mitigation program will be able to offset emission reductions forgone for the remainder of the lifetime of these furnaces once mitigation fees are received during the last calendar quarter of 2014 and the first quarter of 2015. The six month delay of the compliance date will also provide additional time for manufacturers to receive incentive funds for early introduction of compliant furnaces.

The PR 1111 mitigation fee will be used to fund existing SCAQMD programs including the clean leaf-blower and lawn mower exchange programs and Carl Moyer and similar programs. These programs can fully mitigate the potential emission reductions forgone. For example, the cost of a low emission leaf blower is about \$180. Each leaf blower purchased and exchanged for an old leaf blower by the SCAQMD will reduce more than six times the annual NO<sub>x</sub> emission reductions forgone due to the purchase of one non-compliant furnace. Five low emission leaf blowers replaced every five years over 25 years will mitigate the emissions reductions foregone by the sale of at least 6 non-compliant furnaces.

## **COST EFFECTIVENESS**

The proposed amendment does not impose additional requirements on manufacturers of residential furnaces. The proposed amendment provides an alternate compliance option and delays a compliance date, which is expected to provide regulatory relief for the affected manufacturers and allows additional time to qualify for incentive funds.

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) ANALYSIS**

Pursuant to the California Environmental Quality Act (CEQA) and SCAQMD Rule 110, the appropriate CEQA documentation has been prepared to analyze any potential adverse environmental impacts associated with PAR 1111. The Draft Environmental Assessment (EA)

was released for a 30-day public review and comment period from July 29 through August 27, 2014. No comment letters were received from the public regarding the Draft EA. The environmental analysis in the Draft EA concluded that proposed amended Rule 1111 would not generate any significant adverse environmental impacts. The Final EA is available at SCAQMD Headquarters, by calling the SCAQMD Public Information Center at (909) 396-3600, or by accessing SCAQMD's CEQA website at: <http://www.aqmd.gov/home/library/documents-support-material/lead-agency-scaqmd-projects/aqmd-projects---year-2014>. The CEQA document has been released for public review and comment, and is available at SCAQMD Headquarters, by calling the SCAQMD Public Information Center at (909) 396-3600, or by accessing SCAQMD's CEQA website at: [www.aqmd.gov/ceqa](http://www.aqmd.gov/ceqa).

## **SOCIOECONOMIC ASSESSMENT**

Proposed Amended Rule 1111 will allow affected manufacturers to pay a mitigation fee of \$150 to \$200 per unit in lieu of complying with the new NOx emission limit. The option to pay a mitigation fee was requested by manufacturers and participation is strictly voluntary. This mitigation fee is equivalent to the additional cost of a new compliant furnace and will provide manufacturers an alternative to producing furnaces that comply with the new emission limit. As such, PAR 1111 does not impose additional costs on the affected manufacturers beyond what was analyzed for the previous Rule 1111 amendment in 2009 and does not have additional adverse socioeconomic impacts.

## **~~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 1111 to provide residential furnace manufacturers additional time to develop the technology to meet the NOx emission limit.~~

**~~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, 40702, 40725 through 40728, and 41508.~~

**~~Clarity:~~** ~~PAR 1111 has been written or displayed so that its meaning can be easily understood by the persons affected by the rule.~~

**~~Consistency:~~** ~~PAR 1111 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 1111 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 statutes which the SCAQMD hereby implements, interprets or makes specific are referenced: Health and Safety Code sections 40440(a).~~

## **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 different levels of emission reductions, relative to ozone, CO, SO<sub>x</sub>, NO<sub>x</sub>, and their precursors.

Because this rule amendment provides furnace manufacturers with an alternate compliance option to provide regulatory relief and does not impose a new BARCT limit, a typical incremental cost-effectiveness analysis is not applicable for this 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. 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 1111 units. Rule 1111 is also the only SCAQMD rule regulating this type of equipment. Because there are no state or federal requirements for PAR 1111 units, the proposed amendments are not in conflict with and do not duplicate any SCAQMD, state or federal requirement.

## **REFERENCES**

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## REFERENCES

CEC, 2004. *California Statewide Residential Appliance Saturation Study (400-04-009)*. California Energy Commission, June 2004.

DOE. 2007. *Technical Support Document: Energy Efficiency Program for Consumer Products: Energy Conservation Standards for Residential Furnaces and Boilers*. U.S. Department of Energy, September 2007.

SCAQMD, 2009. *Staff Report: Proposed Amended Rule 1111 – Reduction of NOx Emissions From Natural-Gas-Fired, Fan-Type Central Furnaces*. South Coast Air Quality Management District, November 2009.

SCAQMD, 2013. *Status of Rule 1111 Technology Assessment and Demonstration Projects for Residential Furnaces*. South Coast Air Quality Management District, March 2013.

SCAQMD, 2014. *Rule 1111 Technology Assessment for Residential Furnaces*. South Coast Air Quality Management District, January 2014.



## **RESPONSE TO COMMENTS**

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## RESPONSE TO COMMENTS

**Comment:** Because Rule 1111 is an approved rule in the state implementation plan (SIP), the proposed amendment could interfere with demonstration of attainment or reasonable further progress under section 110(l) of the federal Clean Air Act (CAA) or other provisions of the CAA. In addition, PAR 1111 may undermine the rules enforceability and preclude reliance on it for SIP emission reduction credit in accordance with USEPA policy on economic incentive programs (EIPs) and other nontraditional emission reduction measures. USEPA approval of PAR 1111 depends upon demonstration that its provisions, including fee provisions, result in emission reductions that are surplus, quantifiable, enforceable, permanent and consistent with all applicable CAA requirements.

**Response:** The SCAQMD 2007 and 2012 Air Quality Management Plan SIPs set aside sufficient NOx emissions reductions to offset potential emission reduction shortfalls resulting from delays in implementing technology forcing rules. Therefore, the potential SIP reductions foregone/delayed are addressed- via the SIP set aside, not incentive programs.

**Comment:** Why is the mitigation option for three years?

**Response:** The mitigation option is for one to three years. The three year mitigation option was requested by stakeholders.

**Comment:** Why is the compliance date for condensing (high efficiency) furnaces delayed three months from October 1, 2014 to January 1, 2015?

**Response:** In the preliminary draft rule presented at the Public Workshop, the compliance date was delayed in order to provide manufacturers time to prepare and submit mitigation fee compliance plans. The current proposal delays the compliance date until April 1, 2015 because of comments received at the Public Workshop.

**Comment:** All compliance dates should be delayed at least one year. Manufacturers need additional time for material selection, product design, preparing new manufacturing lines and furnace durability and safety testing.

**Response:** Proposed Amended Rule (PAR) 1111 will provide all manufacturers at least six months of delay to provide additional time for condensing furnace product development and testing, as well as for training of distributors and installers. Moreover, PAR 1111 will allow up to three additional years of delay for any category of furnace for all manufacturers through a mitigation fee alternate compliance plan which was requested by industry. This proposed alternative compliance option is expected to achieve equivalent NOx emission reductions to current rule requirements due to implementation of emission reduction projects to be funded by mitigation fee alternate compliance plans.

**Comment:** The proposed compliance date for condensing furnaces, January 1, 2015, is in the middle of the heating season. That is not a good date to transition from existing to new models of furnaces. Our distributors and installers must be educated about the new furnaces and this will require training and establishment of tracking systems by distributors.

**Response:** In response to manufacturers' request, SCAQMD staff has further delayed the compliance date for condensing furnaces until April 1, 2015.

**Comment:** What is the basis of the mitigation fee?

**Response:** The mitigation fee is based ~~both on the cost of purchasing emission reductions to mitigate the sale of non-compliant furnaces and on the expected cost of producing compliant furnaces.~~ Assuming the mitigation fees are used in the SCAQMD low emission leaf blower program, the cost of one leaf blower is about \$180 and will offset the emissions of about 5 furnaces for at least 5 years. ~~Four to five low emission leaf blowers will have to be purchased over the lifetime of a furnace to fully mitigate emissions of a furnace with emissions at 40 ng/J.~~

**Comment:** The mitigation fee should be paid after non-compliant units are sold and not before.

**Response:** The proposed rule has been changed so that mitigation fees are paid at the end of an alternate compliance period. ~~The mitigation fee compliance option is designed to fund emission reduction projects to offset the sale of non-compliant furnaces. If the mitigation fees are paid at the end of a quarter or year, then there is a significant delay in funding projects with emission reductions. When fees are paid in advance, significant air quality impacts can be mitigated.~~

**Comment:** The mitigation fee is too high. The fee is higher than the cost difference between compliant and non-compliant units.

**Response:** The mitigation fee is based ~~both on the cost of purchasing emission reductions to mitigate the sale of non-compliant furnaces and on the high end of the range of expected cost to producing compliant furnaces.~~ The main reason for the proposed fee levels is that these amounts are necessary in order to fund enough emission reductions to mitigate the sale of non-compliant furnaces.

**Comment:** Condensing (high efficiency) units pollute less because they use less natural gas and should not have a higher fee.

**Response:** The mitigation fee for condensing and standard efficiency furnaces are both approximately the same cost as one low emission leaf blower (~ \$180) and more than four leaf blowers must be purchased to mitigate the emissions of one furnace over its lifetime. Each leaf blower can mitigate the emissions of five furnaces for at least five years.

While condensing furnaces emit less green-house gases than standard units, condensing units do not emit less NOx than standard units. Note that the emission limit for both condensing and standard units is in ng/J of heat to the heated space (net useful heat). It is not based on the gross amount of heat generated (amount of gas used). The average of emission test results for current condensing and standard units are the same. In addition, condensing units do not emit less NOx than standard units on a mass basis. In fact, the form of the rule emission limit allows condensing units to emit NOx at higher concentrations (PPM) than standard units.

**Comment:** Manufacturers should have the option to apply for less than one full year of sales. Manufacturers should also be able to reconcile their sales at the end of the mitigation fee period and pay additional fees if needed and receive a refund if they have paid for more units than they have sold.

**Response:** In lieu of a yearlong mitigation plan in the first year the new emission standard is in effect for any type of furnace, a manufacturer may use the sell through period for up to 10

months. In addition, the mitigation program allows manufacturers to apply for a one year alternate compliance plan for up to 3 successive years regardless of the timing of the compliance date (April or October). A compliance plan for less than one year will also be difficult to enforce. A one year mitigation plan coupled with the 10 month sell through provision provides companies manufacturers with flexibility. The proposed PAR 1111 mitigation alternative and fee payment system was revised by staff to allow manufacturers to pay mitigation fees at the end of each alternate compliance period~~reconcile their sales at the end of the mitigation fee period and pay additional fees or receive a refund of excess fees paid.~~ The mitigation fee program is designed so that all manufacturers are subject to the same requirements if they choose that option.

**Comment:** The cost of a new furnaces or an existing furnace with a mitigation fee may cause homeowners to delay the purchase of a new furnace when an old furnace needs repair. This will result in fewer NOx emission reductions than projected for the current rule.

**Response:** This proposed amendment will not change the cost of new compliant units because there are no additional costs added to new furnaces. Thus, PAR 1111 will not result in significant emission reductions foregone relative to the current rule.

This proposed amendment will not affect homeowner's decisions regarding furnace repair versus replacement and will not affect the amount of emission reductions achieved by Rule 1111. Homeowners make decisions regarding repair or replacement of a furnace based on many factors including: the type and cost of the repair, the cost of a new unit and other components such as ducts, and the cost of air conditioning components and labor cost for a new furnace. The cost of replacing a new circuit board, exhaust motor or fan, air circulation fan and motor, or gas supply components is significantly less than replacing an entire furnace, modifying the air conditioning system, replacing some ducting and a new thermostat. Most homeowners replace furnace components when they fail. It is the least cost option. They replace whole furnaces when they remodel their house and want a new furnace or have a failure of the air conditioning system and decide to replace both the cooling and heating system at the same time.

**Comment:** What constitutes a sale or delivery into the District?

**Response:** The first sale or delivery to any party in the SCAQMD whether it is a distributor, developer, contractor or homeowner.

**Comment:** Can non-compliant units be stored in the SCAQMD when the manufacturer provides compliant units for sale for use in the SCAQMD?

**Response:** The current rule and proposed amendment allows manufacturers to store non-compliant units in the SCAQMD. The manufacturer and distributor must have in place a system to identify and track non-compliant units that are intended to be sold outside the boundaries of the SCAQMD. For SCAQMD Rule 1121, this is accomplished using an additional label on the product and the shipping carton to identify non-compliant units that cannot be sold or installed for use in the SCAQMD.

**Comment:** Can non-compliant units, intended for sale outside the SCAQMD, be stored in the SCAQMD without paying the mitigation fee if a manufacturer is participating in the mitigation fee program?

**Response:** The proposed rule would allow units intended for sale outside the SCAQMD to be exempt from the mitigation fee. However, to avoid paying a mitigation fee for all units shipped to the SCAQMD, the manufacturer and distributor must have in place and implement a plan to clearly identify all units. The manufacturer and distributor must place labels on each unit and the outside of each unit's shipping container identifying those units that may be sold into the SCAQMD pursuant to the 10 month sell through period in the rule, those units stored for sale outside the SCAQMD, and those units sold pursuant to a mitigation fee alternate compliance plan. In addition, the manufacturer and distributor must have in place a system to identify the date each unit was shipped to the distribution center in the SCAQMD, the date each unit arrived at the distribution center, the dates each unit was sold and shipped out of the distribution center, the address where each unit was shipped to (for units sold into and out of the SCAQMD) and the person or business who purchased each unit.

**Comment:** Is the mitigation fee for the first compliance date based on all sales into the SCAQMD or only the sale of condensing (high efficiency units)?

**Response:** A mitigation plan application is only for the sale of the type of units and year for which the manufacturer is applying. For example, a mitigation fee plan for condensing furnaces is based only on the prior sales of condensing furnaces into the SCAQMD. In order to sell non-compliant units in the SCAQMD, each year of each type of furnace will require a separate mitigation plan submittal with a separate check for the mitigation plan application and for the actual mitigation fees.

**Comment:** How does a company apply for the rebate incentives for early compliance?

**Response:** The application process is similar to the process for the mitigation fee compliance plan.

The manufacturer will send a letter to SCAQMD Permit Services with the name of the manufacturer submitting the Rule 1111 rebate incentive early compliance plan signed by a responsible official identifying the type of compliance plan and the time period that the early compliance plan covers. All applications must be for time periods early than 90 days prior to the applicable compliance date.

The submittal will include a completed SCAQMD Form 400A with company name, identification that application is for an alternate compliance plan (section 7 of form), identification that the request is for the Rule 1111 rebate incentive early compliance application (section 9 of form), and signature of the responsible official.

The application must include documentation for all rule compliant units distributed or sold into the SCAQMD for the time period covered by the application including the number of each specific model sold or distributed by the manufacturer to each company or person in the SCAQMD, a copy of each company or person's invoice purchasing the compliance furnaces and a copy of the certification letter from the SCAQMD for each specific model included in the manufacturer's application that identifies the model as compliant with the 14 ng/J NO<sub>x</sub> emission limit. A copy of the letter and the complete application will also be sent to the SCAQMD Manager for Area Source Compliance.

**Comment:** Does a company need to test furnaces that are designed to run on natural gas but are sold with a propane conversion kit?

**Response:** Units that are designed to run on natural gas must be tested, comply with the emission limit and receive SCAQMD certification. Units that are designed to run only on propane are exempt from the rule. Units that can be converted from natural gas to propane must receive SCAQMD certification on natural gas in order to be sold for use in the SCAQMD. All furnaces are tested based on how they are manufactured, the SCAQMD does not test units installed in residences.

**Comment:** Who can do certification testing of furnaces?

**Response:** All testing must be performed by third parties using a SCAQMD approved protocol. Questions regarding testing should be directed the SCAQMD Source Testing division (909-396-3536 or 909-396-2162).

# SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

## **Final Environmental Assessment:**

### **Proposed Amended Rule 1111 – Reduction of NO<sub>x</sub> Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces**

**August 2014**

**SCAQMD No. 140722JI**

#### **Executive Officer**

Barry R. Wallerstein, D. Env.

#### **Deputy Executive Officer**

**Planning, Rule Development and Area Sources**

Elaine Chang, DrPH

#### **Assistant Deputy Executive Officer**

**Planning, Rule Development and Area Sources**

Philip Fine, Ph.D.

#### **Director of Strategic Initiatives**

**Planning, Rule Development and Area Sources**

Susan Nakamura

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**Author:** Jeff Inabinet Air Quality Specialist

**Technical Assistance:** Wayne Barcikowski Air Quality Specialist

**Reviewed By:** Michael Krause Program Supervisor, CEQA  
Joe Cassmassi Planning and Rules Manager  
Barbara Baird Chief Deputy Counsel  
Ruby Fernandez Senior Deputy District Counsel  
Gary Quinn Program Supervisor

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT  
GOVERNING BOARD**

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Supervisor, Fourth District  
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MICHAEL A. CACCIOTTI  
Councilmember, South Pasadena  
Cities of Los Angeles County/Eastern Region

JOSIE GONZALES  
Supervisor, Fifth District  
County of San Bernardino

JOSEPH K. LYOU, Ph. D.  
Governor's Appointee

JUDITH MITCHELL  
Mayor, Rolling Hills Estates  
Cities of Los Angeles County/Western Region

SHAWN NELSON  
Supervisor, Fourth District  
County of Orange

DR. CLARK E. PARKER, SR.  
Senate Rules Appointee

MIGUEL A. PULIDO  
Mayor, Santa Ana  
Cities of Orange County

**EXECUTIVE OFFICER:**

BARRY R. WALLERSTEIN, D.Env.



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## **PREFACE**

This document constitutes the Final Environmental Assessment (EA) for Proposed Amended Rule 1111 – Reduction of NO<sub>x</sub> Emissions from Natural-Gas-Fired, Fan-Type Central Furnaces. The Draft EA was released for a 30-day public review and comment period from July 29, 2014 to August 27, 2014. No comment letters were received from the public relative to the environmental analysis in the Draft EA. The environmental analysis in the Draft EA concluded that Proposed Amended Rule 1111 would not generate any significant adverse environmental impacts.

Minor modifications were made to the proposed amended rule subsequent to release of the Draft EA for public review. To facilitate identifying modifications to the document, added and/or modified text is underlined. Staff has reviewed these minor modifications and concluded that they do not make any impacts substantially worse or change any conclusions reached in the Draft EA. As a result, these minor revisions do not require recirculation of the document pursuant to CEQA Guidelines §15073.5. Therefore, this document now constitutes the Final EA for Proposed Amended Rule 1111.

## **CHAPTER 1 - PROJECT DESCRIPTION**

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**Introduction**

**Affected Facilities**

**California Environmental Quality Act**

**Project Location**

**Project Objective**

**Project Background**

**Technology Overview**

**Project Description**

## **INTRODUCTION**

The California Legislature created the South Coast Air Quality Management District (SCAQMD) in 1977<sup>1</sup> as the agency responsible for developing and enforcing air pollution control rules and regulations in the South Coast Air Basin (Basin) and portions of the Salton Sea Air Basin and Mojave Desert Air Basin referred to herein as the District. By statute, the SCAQMD is required to adopt an air quality management plan (AQMP) demonstrating compliance with all federal and state ambient air quality standards for the district.<sup>2</sup> Furthermore, the SCAQMD must adopt rules and regulations that carry out the AQMP.<sup>3</sup> The 2012 AQMP concluded that major reductions in emissions of particulate matter (PM), oxides of sulfur (SOx) and oxides of nitrogen (NOx) are necessary to attain the state and national ambient air quality standards for ozone, particulate matter with an aerodynamic diameter of 10 microns or less (PM10) and particulate matter with an aerodynamic diameter of 2.5 microns or less (PM2.5). More emphasis is placed on NOx and SOx emission reductions because they provide greater ozone and PM emission reduction benefits than volatile organic compound (VOC) emission reductions. NOx emission reductions continue to be necessary because emission reductions of ozone precursors are necessary to meet the ozone standards. NOx emission reductions also contribute to achieving the PM2.5 ambient air quality standards.

Ozone, a criteria pollutant that is formed when NOx and VOCs react in the atmosphere, has been shown to adversely affect human health. The federal one-hour<sup>4</sup> and eight-hour ozone standards were exceeded in the district in 2010. The Central San Bernardino Mountain area recorded the greatest number of exceedences of the one-hour state standard (52 days), eight-hour state standard (101 days), and eight-hour federal standard (74 days). However, none of the four counties had health advisory days in 2010. Altogether, in 2010, the South Coast Air Basin exceeded the federal eight-hour ozone standard on 102 days, the state one-hour ozone standard on 79 days, and the state eight-hour ozone standard on 131 days.<sup>5</sup>

The California Clean Air Act (CCAA) requires districts to achieve and maintain state standards by the earliest practicable date and for extreme non-attainment areas, to include all feasible measures pursuant to Health and Safety Code §§40913, 40914, and 40920.5. The term “feasible” is defined in the Title 14 of the California Code of Regulations, §15364, as a measure “capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.”

Proposed Amended Rule (PAR) 1111 implements AQMP control measure CMB-03 of the 2007 AQMP. Control Measure CMB-03 proposed NOx emission reductions of 50 to 75 percent by requiring furnaces to meet a NOx emission limit of between 10 to 20 nanograms per Joule (ng/J) of heat output [15 to 30 parts per million (ppm) at three percent oxygen]. The objective of PAR 1111 is to reduce NOx emissions from fan-type gas-fired residential furnaces with heat input ratings ~~between 50,000 and~~ less than 175,000 British thermal units per hour (Btu/hr).

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<sup>1</sup> The Lewis-Presley Air Quality Management Act, 1976 Cal. Stats., ch 324 (codified at Health and Safety Code, §§40400-40540).

<sup>2</sup> Health and Safety Code, §40460 (a).

<sup>3</sup> Health and Safety Code, §40440 (a).

<sup>4</sup> The federal one-hour ozone standard was replaced by the federal eight-hour ozone standard, effective June 15, 2005, but SCAQMD must still attain this standard, based on a 2011 court decision.

<sup>5</sup> 2010 Air Quality Historical Data, South Coast Air Quality Management District, <http://www.aqmd.gov/smog/historical/AQ10card.pdf>.

## **AFFECTED FACILITIES**

PAR 1111 affects manufacturers (NAICS 333) and distributors and wholesalers (NAICS 423) of residential furnaces. Because heating units regulated by the rule are used in most residential and many commercial settings for heating small buildings, construction and building contractors are also affected by PAR 1111. The Air Conditioning Heating and Refrigeration Institute (AHRI), the major manufacturer's trade organization, indicates that there are no manufacturers of fan-type gas-fired residential furnaces in the SCAQMD. However, these companies do maintain regional sales offices and distribution centers in the SCAQMD and there are manufacturers of other types of heating furnaces in the SCAQMD.

## **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

PAR 1111 is a discretionary action by a public agency, which has potential for resulting in direct or indirect changes to the environment and, therefore, is considered a "project" as defined by the California Environmental Quality Act (CEQA). SCAQMD is the lead agency for the proposed project and has prepared this Final environmental assessment (EA) with no significant adverse impacts pursuant to its Certified Regulatory Program and SCAQMD Rule 110. California Public Resources Code §21080.5 allows public agencies with regulatory programs to prepare a plan or other written document in lieu of an environmental impact report or negative declaration once the Secretary of the Resources Agency has certified the regulatory program. SCAQMD's regulatory program was certified by the Secretary of the Resources Agency on March 1, 1989, and is codified as SCAQMD Rule 110.

CEQA and Rule 110 require that potential adverse environmental impacts of proposed projects be evaluated and that feasible methods to reduce or avoid significant adverse environmental impacts of these projects be identified. To fulfill the purpose and intent of CEQA, the SCAQMD has prepared this Final EA to address the potential adverse environmental impacts associated with the proposed project. The Final EA is a public disclosure document intended to: (a) provide the lead agency, responsible agencies, decision makers and the general public with information on the environmental effects of the proposed project; and, (b) be used as a tool by decision makers to facilitate decision making on the proposed project.

SCAQMD's review of the proposed project shows that the proposed project would not have a significant adverse effect on the environment. Therefore, pursuant to CEQA Guidelines §15252 and 15126.6(f), no alternatives are proposed to avoid or reduce any significant effects because there are no significant adverse impacts, and pursuant to CEQA Guidelines §15126.4(a)(3), mitigation measures are not required for effects not found to be significant. The analysis in the form of the environmental checklist in Chapter 2 supports the conclusion of no significant adverse environmental impacts.

Comments received on the Final EA during the public comment period and responses to comments will be prepared and included in the Final EA for the proposed project.

## **PROJECT LOCATION**

The known affected facilities are located throughout the SCAQMD jurisdiction. The SCAQMD has jurisdiction over an area of approximately 10,743 square miles, consisting of the four-county South Coast Air Basin (Basin) (Orange County and the non-desert portions of Los Angeles,

Riverside and San Bernardino counties), and the Riverside County portions of the Salton Sea Air Basin (SSAB) and Mojave Desert Air Basin (MDAB). The Basin, which is a subarea of the SCAQMD's jurisdiction, is bounded by the Pacific Ocean to the west and the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east. It includes all of Orange County and the nondesert portions of Los Angeles, Riverside, and San Bernardino counties. The Riverside County portion of the SSAB is bounded by the San Jacinto Mountains in the west and spans eastward up to the Palo Verde Valley. The federal nonattainment area (known as the Coachella Valley Planning Area) is a subregion of Riverside County and the SSAB that is bounded by the San Jacinto Mountains to the west and the eastern boundary of the Coachella Valley to the east (Figure 1-1).



**Figure 1-1**  
**Boundaries of the South Coast Air Quality Management District**

## **PROJECT OBJECTIVE**

The objectives of PAR 1111 are to:

- Provide manufacturers subject to Rule 1111 additional time to produce residential furnaces that meet the NOx emission limit of 14 ng/J;
- delay the compliance date for condensing (high efficiency) units from October 1, 2014 until April 1, 2015;
- provide manufacturers subject to Rule 1111 an option to pay a per unit mitigation fee for each condensing, non-condensing, weatherized and mobile home furnace distributed or sold into the SCAQMD.

## **PROJECT BACKGROUND**

Rule 1111 was adopted by the SCAQMD Governing Board in December 1978, addressing all sizes of space heating furnaces. The original rule required all residential and commercial space heating furnaces to meet a NOx emission limit of 40 ng/J of heat output (equivalent to 55 ppm at a reference level of 3% oxygen) beginning January 1, 1984. At the December 1978 rule adoption Hearing, a rule requirement that all space heating furnaces meet a 12 ng/J NOx emission limit by 1995 was considered by the Governing Board but not adopted.

Rule 1111 was amended in July 1983 in order to limit applicability to units sized for residences and exempted larger commercial space heaters. The rule amendment limited applicability to furnaces with a heat input of less than 175,000 Btu per hour, or for combination heating and cooling units, a cooling rate of less than 65,000 Btu per hour. The July 1983 amendment also exempted units manufactured for use in mobile homes (manufactured housing), revised the definition of efficiency, and clarified testing procedures.

In November 2009, Rule 1111 was amended to be consistent with the objectives of Control Measure CMB-03 of the 2007 Air Quality Management Plan (AQMP). The 2009 amendment established a new lower NOx emission limit of 14 ng/J (20 ppm at reference level of 3% oxygen) for residential furnaces, which reflects a 65% reduction from the then current limit of 40 ng/J (55 ppm).

Implementation of lower NOx emission limits from the November 2009 rule amendment began in 2012. New mobile home heating units, which were unregulated prior to the 2009 amendment, had to meet a NOx limit of 40 ng/J in 2012 with a future limit of 14 ng/J in 2018. The 40 ng/J emission limit for mobile home furnaces was based on burner and control technology used in existing residential furnaces.

All other new residential space heating furnaces were required to meet a 14 ng/J NOx limit by October 1, 2016. The 2009 amendment required the three major categories of residential furnace – condensing (high efficiency), non-condensing and weatherized – to meet the new 14 ng/J NOx limit by 2014, 2015 and 2016 respectively.

The 2009 amendment to Rule 1111 also made a number of other changes to the rule including updating references to test methods for determining compliance with rule emission limits and providing more specificity in the labeling requirements. To facilitate the depletion of existing inventories and to ensure smooth transition to the new limits, Rule 1111 also provided a temporary 10-month exemption (a sell-through period) for units manufactured before the applicable future compliance date and delivered into the SCAQMD prior to the compliance date.

At the time Rule 1111 was amended in 2009, there were no commercially available units meeting the future effective limits. In order to encourage and accelerate technology development, Rule 1111 provided an incentive for early compliance with the 14 ng/J NO<sub>x</sub> emission limit. Companies that deliver 14 ng/J furnaces into the SCAQMD prior to the applicable compliance date can elect to receive a payment of \$75 for each standard efficiency furnace and \$90 for each high-efficiency unit sold and delivered into the SCAQMD 90 days prior to the applicable compliance date. These manufacturer rebates would result in savings of \$150 to \$350 to consumers because of cost markups in the supply chain. This early compliance program is funded by the SCAQMD Rule 1121 Mitigation Program and provides up to \$3,000,000 for the residential furnace rebate program. As funds are limited, payments for early compliance are on a first-come first-served basis. To promote and assist the development of compliant furnaces, the resolution for the 2009 rule amendment also committed SCAQMD funding for residential furnace technology demonstration projects.

The 2009 amendment of Rule 1111 also required a technology assessment and status report to the Governing Board. This technology assessment evaluates both the feasibility of the new lower NO<sub>x</sub> emission limit and the rule implementation schedule. In addition, the amending resolution requires SCAQMD staff to include an analysis of a mitigation fee option that would allow manufacturers to delay compliance with the new NO<sub>x</sub> limit.

Immediately after Rule 1111 was amended in November 2009, the SCAQMD Technology Advancement Office (TAO) initiated a Request for Proposals (RFP) to develop prototype residential furnaces that meet the new 14 ng/J NO<sub>x</sub> limit in Rule 1111. The technology development projects have been completed and the prototype furnaces developed through these four projects demonstrate that the new lower Rule 1111 NO<sub>x</sub> limit is achievable in all of the types of forced air residential heating furnaces produced for the United States market.

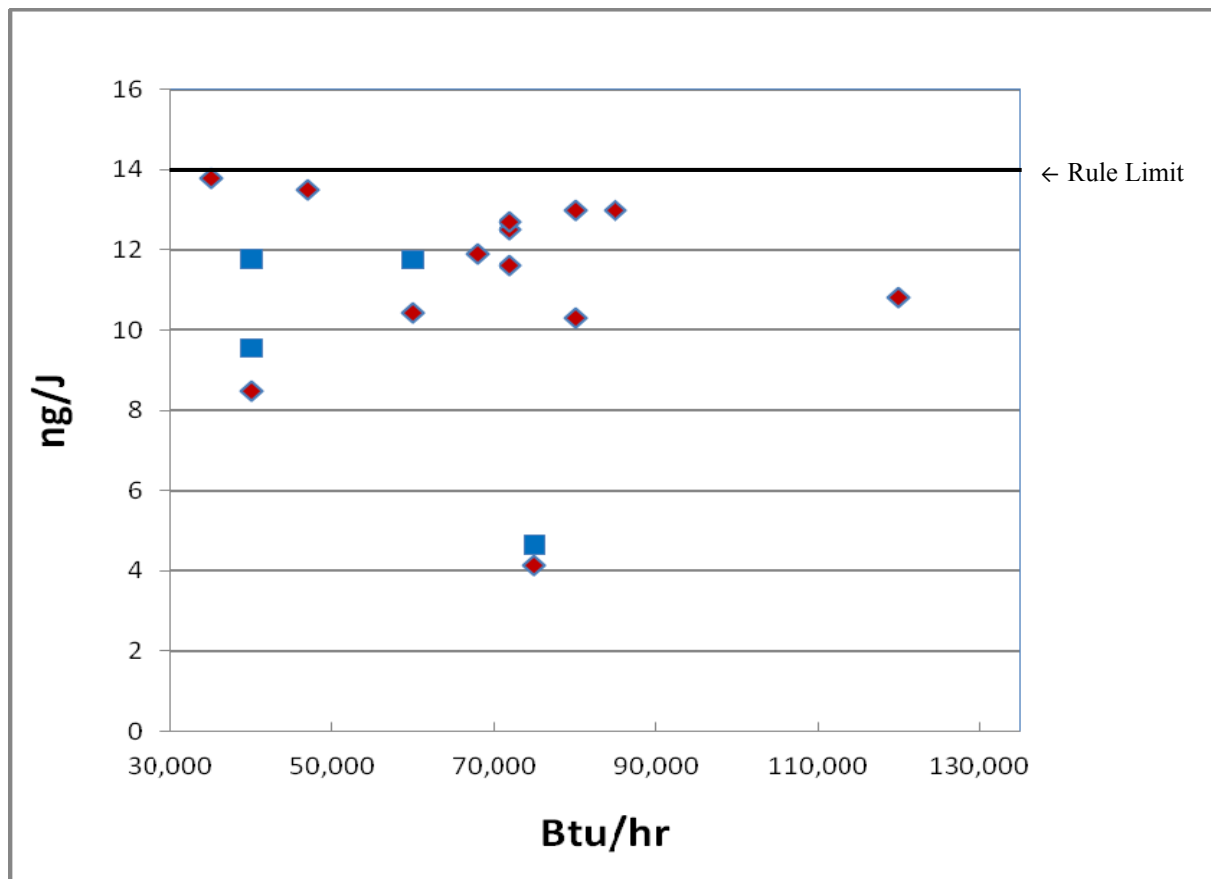
## **TECHNOLOGY OVERVIEW**

Fan-type gas-fired furnaces heat a building by circulating air from inside the building through the furnace. In a fan-type furnace, air is heated when it passes through a heat exchanger. Combustion gases heat up the inside of the heat exchanger and building air moving past the outside of the heat exchanger removes heat from the outside surface. A blower (fan) pulls air through one or more intake ducts and pushes the air past the heat exchanger and through another set of ducts which direct the heated air to different parts of the building. The heated air circulates through the building before it is again pulled into the intake ducts and heated. This process continues until a specific temperature is detected by a thermostat in the building which then shuts off the furnace. When the temperature at the thermostat goes below a set point, the thermostat sends a signal for the furnace to turn on.



As mentioned previously, immediately after Rule 1111 was amended in November 2009, the SCAQMD Technology Advancement Office (TAO) initiated a Request for Proposals (RFP) to develop prototype residential furnaces that meet the new 14 ng/J NO<sub>x</sub> limit in Rule 1111. A request for proposals was issued in February 2010 and TAO staff selected four bids for funding, including two furnace manufacturers, one burner manufacturer and a research institute familiar with residential furnaces. The results of the four technology demonstration projects indicate that the 14 ng/J emission limit in Rule 1111 is achievable in both standard and high efficiency furnaces (condensing furnaces) with single or variable firing rates (see Figure 1-2). With the exception of one furnace that did not pass safety testing by the end of the project, the contractors and their prototype furnaces achieved the project objectives of meeting the NO<sub>x</sub> emissions limit and passing initial safety tests.

**Figure 1-2 – Prototype Furnace NO<sub>x</sub> Emissions (ng/J) \***



\* Standard and high efficiency units are identified by squares and diamonds respectively.

The prototype furnaces developed through these four projects demonstrate that the new lower Rule 1111 NO<sub>x</sub> limit is achievable in all of the types of forced air residential heating furnaces produced for the United States market. In addition, testing indicates that furnaces with the new burners developed for the projects can also meet industry safety requirements. However, there remain issues relating to product design, materials of construction, combustion control, and manufacturing that each company must resolve. Now that prototype furnaces have been

developed, the next steps for each manufacturer would be to complete the product design and select materials of construction, combustion controls and manufacture of the new units.

**PROJECT DESCRIPTION**

PAR 1111 would provide manufacturers additional time (six months) to produce residential furnaces that meet the NOx emission limit of 14 ng/J. Not all manufacturers will be able to produce compliant furnaces by the compliance dates. PAR 1111 would add an alternate compliance option to the rule. In lieu of meeting the new lower NOx emission limit, PAR 1111 will provide manufacturers of residential furnaces subject to Rule 1111 an option to pay a per unit mitigation fee for each condensing, non-condensing, weatherized and mobile home furnace distributed or sold into the SCAQMD. The mitigation fee will be used in established emission reduction programs.

In addition, the proposed rule will delay the compliance date for condensing (high efficiency) units from October 1, 2014 until April 1, 2015. This delay will provide manufacturers additional time for testing new furnace designs and submitting and receiving approval of alternate compliance plans for non-compliant condensing furnaces.

**Table 1-1 – Furnace NOx Limits and Compliance Schedule**

<b>Compliance Date</b>	<b>Equipment Category</b>	<b>NOx Emission Limit (ng/J)</b>
October 1, 2012	Mobile Home Furnace	40
April 1, 2015	Condensing Furnace	14
October 1, 2015	Non-condensing Furnace	14
October 1, 2016	Weatherized Furnace	14
October 1, 2018	Mobile Home Furnace	14

The mitigation fee alternate compliance option can be used for up to 36 months past the applicable compliance date in Table 1 of section (c) of the rule. However, the manufacturer must submit, 90 days prior to the applicable compliance date, a separate application for each 12 month alternate compliance period after the compliance date.

A copy of PAR 1111 is included in Appendix A.

## **CHAPTER 2 - ENVIRONMENTAL CHECKLIST**

---

**Introduction**

**General Information**

**Environmental Factors Potentially Affected**

**Determination**

**Environmental Checklist and Discussion**

## **INTRODUCTION**

The environmental checklist provides a standard evaluation tool to identify a project's potential adverse environmental impacts. This checklist identifies and evaluates potential adverse environmental impacts that may be created by the proposed project.

## **GENERAL INFORMATION**

Project Title:	Final Environmental Assessment (EA) for Proposed Amended Rule (PAR) 1111 – <u>Reduction of NOx Emissions</u> from Natural-Gas-Fired, Fan-Type Central Furnaces
Lead Agency Name:	South Coast Air Quality Management District
Lead Agency Address:	21865 Copley Drive Diamond Bar, CA 91765
CEQA Contact Person:	Mr. Jeff Inabinet (909) 396-2453
PAR 1111 Contact Person	Mr. Wayne Barcikowski (909) 396-3077
Project Sponsor's Name:	South Coast Air Quality Management District
Project Sponsor's Address:	21865 Copley Drive Diamond Bar, CA 91765
General Plan Designation:	Not applicable
Zoning:	Not applicable
Description of Project:	PAR 1111 would provide manufacturers additional time to produce residential furnaces that meet the NOx emission limit of 14 nanograms per Joule (ng/J). Not all manufacturers will be able to produce compliant furnaces by the compliance dates. PAR 1111 will add an alternate compliance option to the rule. In lieu of meeting the new lower NOx emission limit, PAR 1111 will provide manufacturers of residential furnaces subject to Rule 1111 an option to pay a per unit mitigation fee for each condensing, non-condensing, weatherized and mobile home furnace distributed or sold into the SCAQMD. In addition, the proposed rule will delay the compliance date for condensing (high efficiency) units from October 1, 2014 until April 1, 2015. This delay will provide manufacturers additional time for testing new furnace designs and submitting and receiving approval of alternate compliance plans for non-compliant condensing furnaces. Based on sales estimates for condensing furnaces in southern California, PAR 1111 will result in emission reductions forgone of up to 46 pounds per day during the period from October 1, 2014 until April 1, 2015. These foregone emission reductions, from the sale and installation of non-compliant furnaces during those six months cannot be completely mitigated because the mitigation program will not be in effect until sometime between January 1 and April 1, 2015. However, the mitigation program will be able to offset emission reductions forgone for the remainder of the lifetime of these furnaces once mitigation fees are received during the last calendar quarter of 2014 and the first quarter of 2015. The PAR 1111 mitigation fee will be used to fund existing SCAQMD programs including the clean leaf-blower and lawn mower exchange programs.
Surrounding Land Uses and Setting:	Not applicable
Other Public Agencies Whose Approval is Required:	Not applicable

**ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED**

The following environmental impact areas have been assessed to determine their potential to be affected by the proposed project. As indicated by the checklist on the following pages, environmental topics marked with a "✓" may be adversely affected by the proposed project. An explanation relative to the determination of impacts can be found following the checklist for each area.

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> Aesthetics  | <input type="checkbox"/> Geology and Soils               | <input type="checkbox"/> Population and Housing             |
| <input type="checkbox"/> Agriculture and Forestry Resources                  | <input type="checkbox"/> Hazards and Hazardous Materials | <input type="checkbox"/> Public Services                    |
| <input checked="" type="checkbox"/> Air Quality and Greenhouse Gas Emissions | <input type="checkbox"/> Hydrology and Water Quality     | <input type="checkbox"/> Recreation                         |
| <input type="checkbox"/> Biological Resources                                | <input type="checkbox"/> Land Use and Planning           | <input type="checkbox"/> Solid/Hazardous Waste              |
| <input type="checkbox"/> Cultural Resources                                  | <input type="checkbox"/> Mineral Resources               | <input type="checkbox"/> Transportation/Traffic             |
| <input type="checkbox"/> Energy  | <input type="checkbox"/> Noise                           | <input type="checkbox"/> Mandatory Findings of Significance |

**DETERMINATION**

On the basis of this initial evaluation:

- I find the proposed project, in accordance with those findings made pursuant to CEQA Guideline §15252, COULD NOT have a significant effect on the environment, and that an ENVIRONMENTAL ASSESSMENT with no significant impacts has been prepared.
- I find that although the proposed project could have a significant effect on the environment, there will NOT be significant effects in this case because revisions in the project have been made by or agreed to by the project proponent. An ENVIRONMENTAL ASSESSMENT with no significant impacts will be prepared.
- I find that the proposed project MAY have a significant effect(s) on the environment, and an ENVIRONMENTAL ASSESSMENT will be prepared.
- I find that the proposed project MAY have a "potentially significant impact" on the environment, but at least one effect 1)has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL ASSESSMENT is required, but it must analyze only the effects that remain to be addressed.
- I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier ENVIRONMENTAL ASSESSMENT pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier ENVIRONMENTAL ASSESSMENT, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Date: August 27, 2014

Signature: \_\_\_\_\_

Michael Krause  
Program Supervisor

## **ENVIRONMENTAL CHECKLIST AND DISCUSSION**

As discussed in Chapter 1, the main focus of PAR 1111 is to reduce NO<sub>x</sub> emissions from fan-type gas-fired residential furnaces with heat input ratings ~~between 50,000 and~~ less than 175,000 Btu/hr.

The objectives of PAR 1111 are to:

- Provide manufacturers subject to Rule 1111 additional time to produce residential furnaces that meet the NO<sub>x</sub> emission limit of 14 ng/J;
- delay the compliance date for condensing (high efficiency) units from October 1, 2014 until April 1, 2015;
- provide manufacturers subject to Rule 1111 an option to pay a per unit mitigation fee for each condensing, non-condensing, weatherized and mobile home furnace distributed or sold into the SCAQMD.

An environmental assessment (EA) was previously conducted during the last Rule 1111 amendment in 2009 that analyzed the potential environmental impacts of lowering the NO<sub>x</sub> emission limit for fan-type gas-fired residential furnaces to 14 ng/J. More specifically, the 2009 EA evaluated the impacts from the construction and operation of affected sources and this analysis indicated that the 2009 proposed project would not generate any project-specific significant environmental impacts.

Therefore, this Final EA will not re-evaluate the impacts from implementing and complying with the existing rule requirement (NO<sub>x</sub> emission limit of 14 ng/J) anticipated to require low NO<sub>x</sub> emission technology. In order to ensure that any potential significant adverse environmental impacts are identified and evaluated and that feasible methods to reduce or avoid any potential significant adverse environmental impacts associated with the proposed project are identified and evaluated, the environmental analysis for PAR 1111 focuses on providing manufacturers additional time to produce residential furnaces that meet the NO<sub>x</sub> emission limit of 14 ng/J, providing an option to pay a per unit mitigation fee for each unit sold into the SCAQMD, and delaying the compliance date for condensing (high efficiency) units from October 1, 2014 until April 1, 2015.

Manufacturers, distributors, retailers, and installers of new units will be expected to comply with the proposed requirements in PAR 1111. Compliance with PAR 1111 for a new unit means that the equipment, at the time of manufacture, will be equipped with compliant low NO<sub>x</sub> emission technology that has been certified by the manufacturer to achieve the NO<sub>x</sub> emission standards, or has chosen to pay a fee mitigation option. Currently, existing units are not required to comply with the new NO<sub>x</sub> emission limits. Therefore, no add-on control equipment to existing units is expected to be used. As a result, complying with PAR 1111 is not expected to require any activities using welders, forklifts, etc., to remove and install new equipment or replace old burners with compliant low NO<sub>x</sub> burners. Since compliant units will be installed at the end of existing units operable lifetimes in existing equipment locations, no site preparation or grading activities requiring large construction equipment will be necessary. The mitigation fee will be used in established emission reduction programs, so therefore does not require further evaluation.

	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>I. AESTHETICS.</b> Would the project:				
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

The proposed project impacts on aesthetics will be considered significant if:

- The project will block views from a scenic highway or corridor.
- The project will adversely affect the visual continuity of the surrounding area.
- The impacts on light and glare will be considered significant if the project adds lighting which would add glare to residential areas or sensitive receptors.

**Discussion**

**I. a), b), c) & d)** PAR 1111 applies to new residential heating furnaces. Compliance with PAR 1111 for a new unit means that the equipment, at the time of manufacture, will be equipped with compliant low NOx emission technology that has been certified by the manufacturer to achieve the NOx emission standards or a mitigation fee has been paid. Implementation of PAR 1111 would not require the construction of new buildings or other structures that would obstruct scenic resources or degrade the existing visual character of a site, including but not limited to, trees, rock outcroppings, or historic buildings. Further, PAR 1111 would not involve the demolition of any existing buildings or facilities, require any subsurface activities, require the acquisition of any new land or the surrendering of existing land, or the modification of any existing land use designations or zoning ordinances. Thus, the proposed project is not expected to degrade the visual character of any site or its surroundings, affect any scenic vista, or damage scenic resources. Since the proposed project affects new residential heating units and does not require the addition of lighting, it is not expected to create any new source of substantial light or glare. Moreover, the current proposed amendment merely allows a delay in compliance or payment of a mitigation fee.



Based upon these considerations, significant adverse aesthetics impacts are not anticipated and will not be further analyzed in this Final EA. Since no significant adverse aesthetics impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
<b>II. AGRICULTURE AND FORESTRY RESOURCES.</b> Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland mapping and Monitoring Program of the California Resources Agency, to non- agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined by Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code §51104 (g))?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Result in the loss of forest land or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Project-related impacts on agriculture and forestry resources will be considered significant if any of the following conditions are met:

- The proposed project conflicts with existing zoning or agricultural use or Williamson Act contracts.
- The proposed project will convert prime farmland, unique farmland or farmland of statewide importance as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California Resources Agency, to non-agricultural use.
- The proposed project conflicts with existing zoning for, or causes rezoning of, forest land (as defined in Public Resources Code §12220(g)), timberland (as defined in Public Resources Code §4526), or timberland zoned Timberland Production (as defined by Government Code § 51104 (g)).
- The proposed project would involve changes in the existing environment, which due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use.

**Discussion**

**II. a), b), c) & d)** Compliance with PAR 1111 means installing new compliant units with low NOx emission technology or choosing to pay a mitigation fee option. The residences that will be affected by the implementation of PAR 1111 are located within urbanized areas that are typically designated as residential or commercial (for units located within small commercial structures). Therefore, installing a new compliant unit at the end of a current unit’s operable lifetime to comply with PAR 1111 would not result in any new construction of buildings or other structures that would convert farmland to non-agricultural use or conflict with zoning for agricultural use or a Williamson Act contract. The proposed project would not require converting farmland to non-agricultural uses because the affected units are expected to be completely located within the confines of existing residences and small commercial facilities. For the same reasons, PAR 1111 would not result in the loss of forest land or conversion of forest land to non-forest use.

Based upon these considerations, significant adverse agricultural and forestry resource impacts are not anticipated and will not be further analyzed in this Final EA. Since no significant agriculture and forestry resource impacts were identified, no mitigation measures are necessary or required.

	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>III. AIR QUALITY AND GREENHOUSE GAS EMISSIONS.</b>				
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Violate any air quality standard or contribute to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentrations?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Create objectionable odors affecting a substantial number of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Diminish an existing air quality rule or future compliance requirement resulting in a significant increase in air pollutant(s)?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
g) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Air Quality Significance Criteria**

To determine whether or not air quality impacts from adopting and implementing PAR 1111 are significant, impacts will be evaluated and compared to the criteria in Table 2-1. The project will be considered to have significant adverse air quality impacts if any one of the thresholds in Table 2-1 are equaled or exceeded.

To determine whether or not greenhouse gas emissions from the proposed project may be significant, impacts will be evaluated and compared to the 10,000 MT CO<sub>2</sub>/year threshold for industrial sources.

**TABLE 2-1  
SCAQMD Air Quality Significance Thresholds**

Mass Daily Thresholds <sup>a</sup>		
Pollutant	Construction <sup>b</sup>	Operation <sup>c</sup>
NO <sub>x</sub>	100 lbs/day	55 lbs/day
VOC	75 lbs/day	55 lbs/day
PM <sub>10</sub>	150 lbs/day	150 lbs/day
PM <sub>2.5</sub>	55 lbs/day	55 lbs/day
SO <sub>x</sub>	150 lbs/day	150 lbs/day
CO	550 lbs/day	550 lbs/day
Lead	3 lbs/day	3 lbs/day
Toxic Air Contaminants (TACs), Odor, and GHG Thresholds		
TACs (including carcinogens and non-carcinogens)	Maximum Incremental Cancer Risk ≥ 10 in 1 million Cancer Burden > 0.5 excess cancer cases (in areas ≥ 1 in 1 million) Chronic & Acute Hazard Index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
GHG	10,000 MT/yr CO <sub>2</sub> eq for industrial facilities	

**TABLE 2-1  
SCAQMD Air Quality Significance Thresholds (concluded)**

<b>Ambient Air Quality Standards for Criteria Pollutants<sup>d</sup></b>	
<b>NO<sub>2</sub></b> 1-hour average annual arithmetic mean	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state) 0.03 ppm (state) and 0.0534 ppm (federal)
<b>PM<sub>10</sub></b> 24-hour average annual average	10.4 µg/m <sup>3</sup> (construction) <sup>e</sup> & 2.5 µg/m <sup>3</sup> (operation) 1.0 µg/m <sup>3</sup>
<b>PM<sub>2.5</sub></b> 24-hour average	10.4 µg/m <sup>3</sup> (construction) <sup>e</sup> & 2.5 µg/m <sup>3</sup> (operation)
<b>SO<sub>2</sub></b> 1-hour average 24-hour average	0.25 ppm (state) & 0.075 ppm (federal – 99 <sup>th</sup> percentile) 0.04 ppm (state)
<b>Sulfate</b> 24-hour average	25 µg/m <sup>3</sup> (state)
<b>CO</b> 1-hour average 8-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 20 ppm (state) and 35 ppm (federal) 9.0 ppm (state/federal)
<b>Lead</b> 30-day Average Rolling 3-month average Quarterly average	1.5 µg/m <sup>3</sup> (state) 0.15 µg/m <sup>3</sup> (federal) 1.5 µg/m <sup>3</sup> (federal)

<sup>a</sup> Source: SCAQMD CEQA Handbook (SCAQMD, 1993)

<sup>b</sup> Construction thresholds apply to both the South Coast Air Basin and Coachella Valley (Salton Sea and Mojave Desert Air Basins).

<sup>c</sup> For Coachella Valley, the mass daily thresholds for operation are the same as the construction thresholds.

<sup>d</sup> Ambient air quality thresholds for criteria pollutants based on SCAQMD Rule 1303, Table A-2 unless otherwise stated.

<sup>e</sup> Ambient air quality threshold based on SCAQMD Rule 403.

KEY: lbs/day = pounds per day      ppm = parts per million      µg/m<sup>3</sup> = microgram per cubic meter      ≥ = greater than or equal to  
 MT/yr CO<sub>2</sub>eq = metric tons per year of CO<sub>2</sub> equivalents      > = greater than

**III. a), b) and f)** Attainment of the state and federal ambient air quality standards protects sensitive receptors and the public in general from the adverse effects of criteria pollutants which are known to have adverse human health effects. The lower future NO<sub>x</sub> emission limits proposed in PAR 1111 contribute to carrying out the goals of the 2007 AQMP, specifically, the goals of control measure CMB-03, by replacing the affected units at the end of their operable life to meet current BACT standards. Further, reducing NO<sub>x</sub> emissions from all affected PAR 1111 units helps contribute to attaining and maintaining the state and federal ambient air quality standards. However, the proposed rule will delay the compliance date for condensing (high efficiency) units from October 1, 2014 until April 1, 2015. This delay will provide manufacturers additional time for testing new furnace designs and submitting and receiving approval of alternate compliance plans for non-compliant condensing furnaces. Based on sales estimates for condensing furnaces in southern California, PAR 1111 will result in a delay of emission reductions of up to 46 pounds per day during the period from October 1, 2014 until April 1, 2015. See Appendix B for the sources of the emission data and a derivation of the peak daily emission reduction delay. These foregone emission reductions, from the sale and installation of non-compliant condensing furnaces during those six months cannot be completely mitigated because the mitigation program will not be in effect until sometime between January 1

and April 1, 2015. However, the mitigation program will be able to offset emission reductions forgone for the remainder of the lifetime of these furnaces once mitigation fees are received during the last calendar quarter of 2014 and the first quarter of 2015. A spreadsheet depicting the proposed rule amendment inventory and emission reductions is located in Appendix B.

Thus, because PAR 1111 implements a portion of this control measure in the 2007 AQMP which results in achieving NO<sub>x</sub> reductions, the proposed project does not obstruct implementation of the applicable AQMP. Mitigation fees collected for non-compliant units will be used for emission reduction programs. Additionally, the delay in emission reductions (46 pounds) from the sale and installation of non-compliant furnaces expected to occur between January 1 and April 1, 2015 are below the SCAQMD Mass Daily Air Quality Significance Thresholds (55 pounds). Accordingly, this impact issue will not be further analyzed.

### **Construction Impacts**

Construction-related emissions can be distinguished as either onsite or offsite. Onsite emissions generated during construction principally consist of exhaust emissions (NO<sub>x</sub>, SO<sub>x</sub>, CO, VOC, and PM<sub>10</sub>) from the operation of heavy-duty construction equipment, fugitive dust (as PM<sub>10</sub>) from disturbed soil, and VOC emissions from asphaltic paving and painting. Offsite emissions during the construction phase normally consist of exhaust emissions and entrained paved road dust (as PM<sub>10</sub>) from worker commute trips, material delivery trips, and haul truck material removal trips to and from the construction site.

No construction activities are expected to occur with the installation of compliant units or the payment of a mitigation fee for non-compliant units. Based on the above description of construction activities, the proposed project is not expected to generate construction-related emissions, so no adverse impacts are expected. There are no requirements in PAR 1111 to perform any construction or associated activities (e.g. demolition or building of structures, facilities, infrastructure, or installation of control equipment) because the proposed amendments do not require any physical modifications at installation locations. Further, there are reportedly no furnace manufacturers located in the SCAQMD.

As a result, according to the above analysis of potential construction impacts, there would be no significant adverse construction air quality impacts resulting from the proposed project for criteria pollutants.

### **Operational Impacts- Criteria Pollutants**

According to the Air Conditioning Heating and Refrigeration Institute (AHRI), the manufacturer's trade organization, there are currently no facilities manufacturing fan-type gas-fired residential furnaces in the SCAQMD. However, affected companies do maintain regional sales offices and distribution centers in the SCAQMD and these offices and centers will have to assure that only compliant or mitigation plan units are sold for installation in the SCAQMD.

Annual average NO<sub>x</sub> emissions from residential heating using natural gas were estimated in the 2007 Air Quality Management Plan at 9.7 tons per day in 2002 and 11.1 tons/days in 2023. As most NO<sub>x</sub> emissions occur between October and May, daily emissions in these months are significantly higher.

Based on sales estimates for condensing furnaces in southern California, PAR 1111 will result in a delay in emission reductions of up to 46 pounds per day during the period from October 1, 2014 until April 1, 2015, which is below the SCAQMD Mass Daily Air Quality Significance Thresholds for operational NO<sub>x</sub> emissions (55 lbs/day). These foregone emission reductions, from the sale and installation of non-compliant condensing furnaces during those six months cannot be completely mitigated because the mitigation program will not be in effect until sometime between January 1 and April 1, 2015. However, the mitigation program will be able to offset emission reductions forgone for the remainder of the lifetime of these furnaces once mitigation fees are received during the last calendar quarter of 2014 and the first quarter of 2015. The six month delay of the compliance date will also provide additional time for manufacturers to receive incentive funds for early introduction of compliant furnaces.

The PAR 1111 mitigation fee will be used to fund existing SCAQMD emission reduction programs including the clean leaf-blower and lawn mower exchange programs. These programs can fully mitigate the potential emission reductions forgone. For example, the cost of a low emission leaf blower is about \$180. Each leaf blower purchased and exchanged for an old leaf blower by the SCAQMD will reduce more than six times the annual NO<sub>x</sub> emission reductions forgone due to the purchase of one non-compliant furnace. Five low emission leaf blowers replaced every five years over 25 years will mitigate the emissions reductions foregone by the sale of at least 6 non-compliant furnaces. Therefore, the implementation of PAR 1111 is not expected to result in any significant adverse operational air quality impacts.

### **Operational Impacts- Toxic Air Contaminants**

In assessing potential impacts from the adoption of proposed rule and amendments, SCAQMD staff not only evaluates the potential air quality benefits, but also determines potential health risks associated with implementation of the proposed amendments.

As stated previously, the main objectives of PAR 1111 is to provide manufacturers subject to Rule 1111 additional time to produce residential furnaces that meet the NO<sub>x</sub> emission limit of 14 ng/J, provide manufacturers an option to pay a per unit mitigation fee for each condensing, non-condensing, weatherized and mobile home furnace distributed or sold into the SCAQMD, and delay the compliance date for condensing (high efficiency) units from October 1, 2014 until April 1, 2015. PAR 111 is not expected to generate an increase in any toxic emissions. As a result, there will be no increase in toxic air contaminant emissions from the affected units due to the proposed rule amendments.

**III. c)** The preceding analysis concluded that there would be no significant adverse construction or operational emissions impacts, thus, no incremental effect to other projects causing related impacts. Since PAR 1111 is not expected to be significant for any air quality adverse impact, it is not expected to be cumulatively considerable and, therefore, is not expected to create significant adverse cumulative air quality impacts (CEQA Guidelines §15130(a)).

**III. d)** Affected equipment is not expected to increase exposure by sensitive receptors to substantial pollutant concentrations from the implementation of PAR 1111 for the following reasons: 1) affected equipment is primarily located in existing residential and/or commercial areas; 2) installation of any new equipment subject to PAR 1111 is expected to reduce NO<sub>x</sub> emissions from affected equipment and the mitigation fees collected for the installation of non-compliant units during a limited period of time (no more than 36 months) will be used in

emission reduction programs. Therefore, significant adverse air quality impacts to sensitive receptors are not expected from implementing PAR 1111.

**III. e)** Historically, the SCAQMD has enforced odor nuisance complaints through SCAQMD Rule 402 - Nuisance. Affected equipment is not expected to create objectionable odors affecting a substantial number of people for the following reasons: 1) no heavy-duty construction equipment with associated diesel exhaust odors are necessary to install compliant equipment; 2) typically no odors are associated with combustion equipment (heating furnaces) operating in accordance with Rule 1111; and, 3) installation of any new equipment subject to PAR 1111 is expected to reduce NO<sub>x</sub> emissions from affected equipment and the mitigation fee collected for the installation of non-compliant units during a limited period of time will be used in emission reduction programs. Therefore, no significant odor impacts are expected to result from implementing the PAR 1111.

**III. g) & h)** Changes in global climate patterns have been associated with global warming, an average increase in the temperature of the atmosphere near the Earth's surface, recently attributed to accumulation of GHG emissions in the atmosphere. GHGs trap heat in the atmosphere, which in turn heats the surface of the Earth. Some GHGs occur naturally and are emitted to the atmosphere through natural processes, while others are created and emitted solely through human activities. The emission of GHGs through the combustion of fossil fuels (i.e., fuels containing carbon) in conjunction with other human activities, appears to be closely associated with global warming.<sup>6</sup> State law defines GHG to include the following: carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>) (HSC §38505(g)). The most common GHG that results from human activity is CO<sub>2</sub>, followed by CH<sub>4</sub> and N<sub>2</sub>O.

GHGs and other global warming pollutants are often perceived as solely global in their impacts and that increasing emissions anywhere in the world contributes to climate change anywhere in the world. However, a study conducted on the health impacts of CO<sub>2</sub> "domes" that form over urban areas shows they can cause increases in local temperatures and local criteria pollutants, which have adverse health effects.<sup>7</sup>

The analysis of GHGs is a much different analysis than the analysis of criteria pollutants for the following reasons. For criteria pollutants, the significance thresholds are based on daily emissions because attainment or non-attainment is primarily based on daily exceedances of applicable ambient air quality standards. Further, several ambient air quality standards are based on relatively short-term exposure effects on human health (e.g., one-hour and eight-hour standards). Since the half-life of CO<sub>2</sub> is approximately 100 years, for example, the effects of GHGs occur over a longer term which means they affect the global climate over a relatively long time frame. As a result, the SCAQMD's current position is to evaluate the effects of GHGs over

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<sup>6</sup> Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller (eds.). 2007. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change, 2007. Cambridge University Press.  
[http://www.ipcc.ch/publications\\_and\\_data/ar4/wg1/en/contents.html](http://www.ipcc.ch/publications_and_data/ar4/wg1/en/contents.html)

<sup>7</sup> Jacobsen, Mark Z. "Enhancement of Local Air Pollution by Urban CO<sub>2</sub> Domes," Environmental Science and Technology, as describe in Stanford University press release on March 16, 2010 available at:  
<http://news.stanford.edu/news/2010/march/urban-carbon-domes-031610.html>.

a longer timeframe than a single day (e.g., annual emissions). GHG emissions are typically considered to be cumulative impacts because they contribute to global climate effects.

On December 5, 2008, the SCAQMD adopted an interim CEQA GHG Significance Threshold for projects where SCAQMD is the lead agency (SCAQMD, 2008). This interim threshold is set at 10,000 metric tons of CO<sub>2</sub> equivalent emissions (MTCO<sub>2</sub>eq) per year. Projects with incremental increases below this threshold will not be cumulatively considerable.

The Program EIR for the 2012 AQMP concluded that implementing the control measures in the 2012 AQMP would provide a comprehensive ongoing regulatory program that would reduce overall GHGs emissions in the District.

Based on the type and size of equipment affected by PAR 1111, CO<sub>2</sub> emissions from the operation of the compliant units are likely to decrease from current levels due to improved burner efficiency, thus, a lower amount of fuel being burned, generating less GHG emissions. Also, no fuel penalty is associated with PAR 1111 and the delay is only six months, so GHG emissions will not increase from the existing setting. Additionally, compliance with PAR 1111 means that the equipment, at the time of manufacture, will be equipped with compliant low NO<sub>x</sub> burner technology that has been certified by the manufacturer to achieve the NO<sub>x</sub> emission standards and mitigation fees collected for the installation of non-compliant units during a limited period of time will be used in established emission reduction programs. Therefore, the proposed project is not expected to generate construction-related CO<sub>2</sub> emissions. The proposed amended rule will not change the current natural gas-fired furnace distribution system and will not change the replacement schedule of existing furnaces. Since the proposed project is not expected to generate construction-related CO<sub>2</sub> emissions, and the operational phase of the proposed project is not expected to generate any additional GHG emissions, cumulative GHG adverse impacts from PAR 1111 are not considered significant or cumulatively considerable.

### **Conclusion**

Based on the preceding evaluation of potential air quality impacts from PAR 1111, SCAQMD staff has concluded that PAR 1111 does not have the potential to generate significant adverse air quality impacts. Since no significant adverse air quality and greenhouse gases impacts were identified, no mitigation measures are necessary or required.



	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
<b>IV. BIOLOGICAL RESOURCES.</b>				
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by §404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Conflicting with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with the provisions of an adopted Habitat Conservation plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts on biological resources will be considered significant if any of the following criteria apply:

- The project results in a loss of plant communities or animal habitat considered to be rare, threatened or endangered by federal, state or local agencies.
- The project interferes substantially with the movement of any resident or migratory wildlife species.
- The project adversely affects aquatic communities through construction or operation of the project.

**Discussion**

**IV. a), b), c), & d)** PAR 1111 would not require any new development or require major modifications to buildings or other structures to comply with the new requirements for manufacturers of residential furnaces. The installation of compliant equipment is expected to be located at existing facilities that are already paved. However, if new construction occurs, it is not expected to be caused by the proposed project. As a result, PAR 1111 would not directly or indirectly affect any species identified as a candidate, sensitive or special status species, riparian habitat, federally protected wetlands, or migratory corridors. For this same reason, PAR 1111 is not expected to adversely affect special status plants, animals, or natural communities.

**IV. e) & f)** PAR 1111 would not conflict with local policies or ordinances protecting biological resources or local, regional, or state conservation plans because it would not cause new development. Additionally, PAR 1111 would not conflict with any Habitat Conservation Plan, Natural Community Conservation Plan, or any other relevant habitat conservation plan for the same reason identified in Item IV. a), b), c), and d) above. Likewise, the proposed project would not in any way impact wildlife or wildlife habitat.

Based upon these considerations, significant adverse biological resources impacts are not anticipated and will not be further analyzed in this Final EA. Since no significant adverse biological resources impacts were identified, no mitigation measures are necessary or required.

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	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>V. CULTURAL RESOURCES.</b> Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in §15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) Directly or indirectly destroy a unique paleontological resource, site, or feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Disturb any human remains, including those interred outside formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts to cultural resources will be considered significant if:

- The project results in the disturbance of a significant prehistoric or historic archaeological site or a property of historic or cultural significance to a community or ethnic or social group.
- Unique paleontological resources are present that could be disturbed by construction of the proposed project.
- The project would disturb human remains.

**Discussion**

**V. a), b), c), & d)** PAR 1111 does not require construction of new facilities, increasing the floor space of existing facilities, or any other construction activities that would require disturbing soil that may contain cultural resources. The installation of compliant units is expected to be located at existing facilities that are already paved or will not change the construction of new development in any way. Since no construction-related activities requiring soil disturbance would be associated with the implementation of PAR 1111, no impacts to historical or cultural resources are anticipated to occur. Further, PAR 1111 is not expected to require any physical changes to the environment, which may disturb paleontological or archaeological resources or disturb human remains interred outside of formal cemeteries.

Based upon these considerations, significant adverse cultural resources impacts are not expected from implementing PAR 1111 and will not be further assessed in this Final EA. Since no significant cultural resources impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
<b>VI. ENERGY.</b> Would the project:				
a) Conflict with adopted energy conservation plans?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the need for new or substantially altered power or natural gas utility systems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) Create any significant effects on local or regional energy supplies and on requirements for additional energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Create any significant effects on peak and base period demands for electricity and other forms of energy?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Comply with existing energy standards?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts to energy and mineral resources will be considered significant if any of the following criteria are met:

- The project conflicts with adopted energy conservation plans or standards.
- The project results in substantial depletion of existing energy resource supplies.
- An increase in demand for utilities impacts the current capacities of the electric and natural gas utilities.
- The project uses non-renewable resources in a wasteful and/or inefficient manner.

**Discussion**

**VI. a) & e)** PAR 1111 would provide manufacturers subject to Rule 1111 additional time to produce residential furnaces that meet the NOx emission limit of 14 ng/J, provide manufacturers an option to pay a per unit mitigation fee for each condensing, non-condensing, weatherized and mobile home furnace distributed or sold into the SCAQMD, and delay the compliance date for condensing (high efficiency) units from October 1, 2014 until April 1, 2015. Compliance with PAR 1111 means that the equipment, at the time of manufacture, will be equipped with compliant low NOx emissions technology that has been certified by the manufacturer to achieve the NOx emission standards or that a mitigation fee option has been paid.

Replacing existing equipment with new compliant equipment is expected to result in a slight reduction in demand for natural gas, as new burners are expected to be more efficient than existing affected equipment. As a result, PAR 1111 would not conflict with energy conservation plans, use non-renewable resources in a wasteful manner, or result in the need for new or substantially altered power or natural gas systems. Since PAR 1111 would affect equipment that is primarily located in existing residential and/or commercial areas, it will not conflict with adopted energy conservation plans because existing structures where new compliant units or mitigation fee units would be installed would be expected to continue implementing any existing energy conservation plans, because it is expected that compliant equipment will be just as or more efficient than existing equipment. Additionally, new equipment is expected to comply with existing energy conservation plans and standards to minimize operating costs, while still complying with the requirements of PAR 1111. Accordingly these impact issues will not be further analyzed in the Final EA.

**VI. b), c) & d)** PAR 1111 would not create any significant effects on peak and base period demands for electricity and other forms of energy since no construction of buildings or other structures are anticipated as a result of the installation of new compliant equipment that utilizes low NOx burner technology or with the installation of mitigation fee units.

The universe of sources that would be regulated by PAR 1111 is fired with natural gas. As discussed in the air quality section regarding GHG emissions, due to low NOx emission technology used in the new compliant units, implementation of PAR 1111 is expected to result in a slight decrease in the demand for natural gas. Mitigation fee units are likely to use a similar amount of natural gas as current residential furnaces use. Based upon these considerations, the proposed project is not expected to use energy in a wasteful manner. There will be no substantial depletion of energy resources nor will significant amounts of fuel be needed when compared to existing supplies. Additionally, the proposed amended rule will not change the current natural gas-fired furnace distribution system and will not change the replacement schedule of existing furnaces.

PAR 1111 is not expected to generate significant adverse energy resources impacts and will not be discussed further in this Final EA. Since no significant energy impacts were identified, no mitigation measures are necessary or required.

	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>VII. GEOLOGY AND SOILS.</b> Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
c) Be located on a geologic unit or soil that is unstable or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts on the geological environment will be considered significant if any of the following criteria apply:

- Topographic alterations would result in significant changes, disruptions, displacement, excavation, compaction or over covering of large amounts of soil.
- Unique geological resources (paleontological resources or unique outcrops) are present that could be disturbed by the construction of the proposed project.
- Exposure of people or structures to major geologic hazards such as earthquake surface rupture, ground shaking, liquefaction or landslides.
- Secondary seismic effects could occur which could damage facility structures, e.g., liquefaction.
- Other geological hazards exist which could adversely affect the facility, e.g., landslides, mudslides.

**Discussion**

**VII. a)** Southern California is an area of known seismic activity. Structures must be designed to comply with the Uniform Building Code Zone 4 requirements if they are located in a seismically active area. The local city or county is responsible for assuring that a proposed project complies with the Uniform Building Code as part of the issuance of the building permits and can conduct inspections to ensure compliance. The Uniform Building Code is considered to be a standard safeguard against major structural failures and loss of life. The goal of the code is to provide structures that will: 1) resist minor earthquakes without damage; 2) resist moderate earthquakes without structural damage but with some non-structural damage; and 3) resist major earthquakes without collapse but with some structural and non-structural damage.

The Uniform Building Code bases seismic design on minimum lateral seismic forces (“ground shaking”). The Uniform Building Code requirements operate on the principle that providing appropriate foundations, among other aspects, helps to protect buildings from failure during earthquakes. The basic formulas used for the Uniform Building Code seismic design require determination of the seismic zone and site coefficient, which represent the foundation conditions at the site. Accordingly, buildings and equipment at existing affected facilities are likely to conform with the Uniform Building Code and all other applicable state codes in effect at the time they were constructed.

No new buildings or structures are expected to be constructed in response to the proposed project, so no change in geological existing setting is expected. Additionally, no modification to existing equipment would be necessary. Therefore, PAR 1111 is not expected to affect a facility’s ability to continue to comply with any applicable Uniform Building Code requirements. Consequently, PAR 1111 is not expected to expose persons or property to geological hazards such as earthquakes, landslides, mudslides, ground failure, or other natural hazards. As a result, substantial exposure of people or structure to the risk of loss, injury, or death involving seismic-related activities is not anticipated and will not be further analyzed in this Final EA.

**VII. b), c), d) & e)** Since PAR 1111 would affect primarily existing facilities and would not be the cause of any new construction, it is expected that the soil types present at the affected facilities that are susceptible to expansion or liquefaction would be considered part of the existing setting. New subsidence impacts are not anticipated since no excavation, grading, or fill activities will occur at affected facilities. Further, the proposed project does not involve drilling or removal of underground products (e.g., water, crude oil, et cetera) that could produce new, or make worse existing subsidence effects. Additionally, the affected areas are not envisioned to be prone to new risks from landslides or have unique geologic features, since the affected facilities are located in residential or commercial areas where such features have already been altered or removed. Finally, since adoption of PAR 1111 would be expected to affect operations at primarily existing facilities, the proposed project is not expected to alter or make worse any existing potential for subsidence, liquefaction, etc.

Based on the above discussion, the proposed project is not expected to have an adverse impact on geology or soils. Since no significant adverse impacts are anticipated, this environmental topic will not be further analyzed in the Final EA. No mitigation measures are necessary or required.



	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>VIII. HAZARDS AND HAZARDOUS MATERIALS.</b> Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Emit hazardous emissions, or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code §65962.5 and, as a result, would create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Significantly increased fire hazard in areas with flammable materials?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts associated with hazards will be considered significant if any of the following occur:

- Non-compliance with any applicable design code or regulation.
- Non-conformance to National Fire Protection Association standards.



- Non-conformance to regulations or generally accepted industry practices related to operating policy and procedures concerning the design, construction, security, leak detection, spill containment or fire protection.
- Exposure to hazardous chemicals in concentrations equal to or greater than the Emergency Response Planning Guideline (ERPG) 2 levels.

### **Discussion**

**VIII. a, b) & c)** The proposed project will not create a significant hazard to the public or the environment through the routine transport, use, and disposal of hazardous materials, due to the fact that the proposed amendments do not require the transport, use, and disposal of hazardous materials. Based on the fact that the proposed rules do not require the transport, use and disposal of hazardous materials, PAR 1111 will not create a significant hazard to the public or environment through a reasonably foreseeable release of these materials into the environment.

The proposed amendments affect the manufacture of residential gas-fired furnaces. Therefore, there is little likelihood that affected facilities will emit new hazardous emissions or handle hazardous materials, substances or waste within one-quarter mile of an existing or proposed school as a result of implementing the proposed project. The affected facilities are typically located in residential or commercial areas, but the proposed project does not introduce any hazardous materials, so the existing setting does not change. It is expected that the proposed amendments would improve air quality and visibility over time and, would do likewise for any existing or proposed schools within one-quarter mile of affected facilities.

**VIII. d)** It is not anticipated that complying with PAR 1111 will alter in any way how operators of affected equipment manage their hazardous wastes. Government Code §65962.5 typically refers to a list of facilities that may be subject to Resource Conservation and Recovery Act (RCRA) permits. For any facilities affected by the proposed project that are on the Government Code §65962.5 list, it is anticipated that they would continue to manage any and all hazardous materials and hazardous waste, in accordance with federal, state and local regulations.

**VIII. e)** Since PAR 1111 affects residential natural gas-fired furnaces, implementation of PAR 1111 is not expected to increase or create any new hazardous emissions in general, which could adversely affect public/private airports located in close proximity to the affected sites. Implementation of PAR 1111 is not expected to create any additional safety hazards for people residing or working in the project area.

**VIII. f)** The proposed project will not impair implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan. The units affected by PAR 1111 are primarily located in residential settings. However, some affected units may be located in small commercial settings. For these cases, any existing commercial facilities affected by the proposed project will typically have their own emergency response plans. Any new facilities will be required to prepare emergency response and evacuation plans as part of the land use permit review and approval process conducted by local jurisdictions for new development. Emergency response plans are typically prepared in coordination with the local city or county emergency plans to ensure the safety of not only the public (surrounding local communities), but the facility employees as well. Since the proposed project does not involve the change in current uses of any hazardous materials, or generate any new hazardous waste, no changes to emergency response plans are anticipated.

Health and Safety Code §25506 specifically requires all businesses handling hazardous materials to submit a business emergency response plan to assist local administering agencies in the emergency release or threatened release of a hazardous material. Business emergency response plans generally require the following:

1. Identification of individuals who are responsible for various actions, including reporting, assisting emergency response personnel and establishing an emergency response team;
2. Procedures to notify the administering agency, the appropriate local emergency rescue personnel, and the California Office of Emergency Services;
3. Procedures to mitigate a release or threatened release to minimize any potential harm or damage to persons, property or the environment;
4. Procedures to notify the necessary persons who can respond to an emergency within the facility;
5. Details of evacuation plans and procedures;
6. Descriptions of the emergency equipment available in the facility;
7. Identification of local emergency medical assistance; and
8. Training (initial and refresher) programs for employees in:
  - a. The safe handling of hazardous materials used by the business;
  - b. Methods of working with the local public emergency response agencies;
  - c. The use of emergency response resources under control of the handler; and
  - d. Other procedures and resources that will increase public safety and prevent or mitigate a release of hazardous materials.

In general, every county or city and all facilities using a minimum amount of hazardous materials are required to formulate detailed contingency plans to eliminate, or at least minimize, the possibility and effect of fires, explosion, or spills. In conjunction with the California Office of Emergency Services, local jurisdictions have enacted ordinances that set standards for area and business emergency response plans. These requirements include immediate notification, mitigation of an actual or threatened release of a hazardous material, and evacuation of the emergency area. Adopting PAR 1111 is not expected to hinder in any way with the above business emergency response plan requirements.

**VIII. g)** Although there will be the use of natural gas for fueling the equipment, existing equipment already uses natural gas. The proposed amended rule has no provisions that dictate the use of, or generate any new hazardous material. Since the affected units will primarily be located in residential areas where wildlands are typically not prevalent, risk of loss or injury associated with wildland fires is not expected as a result of implementing PAR 1111.

**VIII. h)** Affected facilities must comply with all local and county requirements for fire prevention and safety. The proposed project does not require any activities which would be in conflict with fire prevention and safety requirements, and thus would not create or increase fire hazards at these existing facilities.

Pursuant to local and county fire prevention and safety requirements, facilities are required to maintain appropriate site management practices to prevent fire hazards. PAR 1111 will not interfere with fire prevention practices.

In conclusion, potentially significant adverse hazard or hazardous material impacts resulting from adopting and implementing PAR 1111 are not expected and will not be considered further. No mitigation measures are necessary or required.

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	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>IX. HYDROLOGY AND WATER QUALITY.</b> Would the project:				
a) Violate any water quality standards, waste discharge requirements, exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board, or otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g. the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Substantially alter the existing drainage pattern of the site or area, including through alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in substantial erosion or siltation on- or off-site or flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
d) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Place housing or other structures within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map, which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam, or inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g) Require or result in the construction of new water or wastewater treatment facilities or new storm water drainage facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
i) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Potential impacts on water resources will be considered significant if any of the following criteria apply:

Water Demand:

- The existing water supply does not have the capacity to meet the increased demands of the project, or the project would use more than 262,820 gallons per day of potable water.
- The project increases demand for total water by more than five million gallons per day.

Water Quality:

- The project will cause degradation or depletion of ground water resources substantially affecting current or future uses.
- The project will cause the degradation of surface water substantially affecting current or future uses.
- The project will result in a violation of National Pollutant Discharge Elimination System (NPDES) permit requirements.
- The capacities of existing or proposed wastewater treatment facilities and the sanitary sewer system are not sufficient to meet the needs of the project.
- The project results in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The project results in alterations to the course or flow of floodwaters.

**Discussion**

The expected options for compliance with the proposed future NO<sub>x</sub> emission limits will involve the installation of new compliant equipment at the end of the current equipment's useful life or the payment of a mitigation fee by the furnace manufacturer. No additional water demand or wastewater generation is expected to result from the operation of the units equipped with low NO<sub>x</sub> burners at the affected equipment locations because this type of control technology does not entail the use of water in the NO<sub>x</sub> control process. Further, PAR 1111 has no provision that would require the construction of additional water resource facilities, increase the need for new or expanded water entitlements, or alter existing drainage patterns. The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge. PAR 1111 would not create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Further, since compliance with PAR 1111 does not involve wastewater processes, there would be no change in the composition or volume of existing wastewater streams from the affected facilities. In addition, the proposed amended rule is not expected to require additional wastewater disposal capacity, violate any water quality standard or wastewater discharge requirements, or otherwise substantially degrade water quality.

**IX. a), f), k), l), & o)** Complying with the proposed project will not change existing operations at affected equipment locations, nor would it result in generation of increased volumes of wastewater because the low NO<sub>x</sub> burners do not require water as part of the NO<sub>x</sub> control process. As a result, there are no potential changes in wastewater volume or composition expected from units complying with the requirements in PAR 1111. Further, PAR 1111 is not expected to cause affected equipment locations to violate any water quality standard or wastewater discharge requirements since there would be no wastewater volumes generated as a result of implementing with PAR 1111. PAR 1111 is not expected to have significant adverse water demand or water quality impacts for the following reasons:

- The proposed project does not increase demand for water by more than 5,000,000 gallons per day.
- The proposed project does not require construction of new water conveyance infrastructure.
- The proposed project does not create a substantial increase in mass inflow of effluents to public wastewater treatment facilities.
- The proposed project does not result in a substantial degradation of surface water or groundwater quality.
- The proposed project does not result in substantial increases in the area of impervious surfaces, such that interference with groundwater recharge efforts occurs.
- The proposed project does not result in alterations to the course or flow of floodwaters.

**IX. b) & n)** Because the NO<sub>x</sub> control process of the burners in the equipment affected by PAR 1111 does not rely on water, no increase to any affected facilities' existing water demand is expected. Because low NO<sub>x</sub> burner technology does not utilize water, implementation of PAR 1111 will not increase demand for, or otherwise affect groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. In addition, implementation of PAR 1111 will not increase demand for water from existing entitlements and resources, and will not require new or expanded entitlements. Since equipment affected by PAR 1111 generally occur in existing structures, no paving is required that might interfere with groundwater recharge. Therefore, no water demand impacts are expected as the result of implementing PAR 1111.

**IX. c), d), & e)** Implementation of PAR 1111 will occur at primarily existing structures, or areas that that are typically located in residential or commercial areas that are paved and may have drainage infrastructures in place. Since PAR 1111 does not involve any construction activities, no impacts to storm water runoff, drainage patterns, groundwater characteristics, or flow are expected. Therefore, these impact areas are not expected to be affected by PAR 1111.

**IX. g), h), i), & j)** The proposed project will not require construction of new housing, contribute to the construction of new building structures, or require modifications or changes to existing structures. Further, PAR 1111 is not expected to require additional workers at affected equipment locations. Therefore, PAR 1111 is not expected to generate construction of any new structures in 100-year flood areas as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood delineation map. As a result, PAR 1111 is not expected to expose people or structures to significant new flooding risks, or make worse any existing flooding risks. Finally, PAR 1111 will not affect in any way any potential flood hazards inundation by seiche, tsunami, or mud flow that may already exist relative to existing facilities or create new hazards at existing facilities.

**IX. m)** PAR 1111 will not increase storm water discharge, since no construction activities are expected at affected equipment locations. Further, no new areas at existing equipment locations are expected to be paved, so the proposed project will not increase storm water runoff during operation. Therefore, no new storm water discharge treatment facilities or modifications to existing facilities

will be required due to the implementation of PAR 1111. Accordingly, PAR 1111 is not expected to generate significant adverse impacts relative to construction of new storm water drainage facilities.

Based upon these considerations, significant hydrology and water quality impacts are not expected from the implementation of PAR 1111 and will not be further analyzed in this Final EA. Since no significant hydrology and water quality impacts were identified, no mitigation measures are necessary or required.

	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>X. LAND USE AND PLANNING.</b>				
Would the project:				
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Land use and planning impacts will be considered significant if the project conflicts with the land use and zoning designations established by local jurisdictions.

**Discussion**

**X. a)** PAR 1111 would only affect the manufacture of combustion equipment that would be primarily at existing equipment locations. The expected options for compliance with the proposed future NOx emission limits in PAR 1111 will involve the installation of new compliant equipment at the end of the equipment’s useful life or the payment of a mitigation fee option. Since PAR 1111 affects equipment primarily operating at existing equipment locations, it does not include any components that would require physically dividing an established community.

**X. b)** There are no provisions in PAR 1111 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments and no land use or planning requirements would be altered by the new requirements for residential furnaces. Therefore, as already noted in the discussion under “Biological Resources,” PAR 1111 would not affect in any habitat conservation or natural community conservation plans, agricultural resources or operations, and would not create divisions in any existing communities. Present or planned land uses in the region would not be significantly adversely affected as a result of implementing the proposed amended rule.

Based upon these considerations, significant adverse land use and planning impacts are not expected from the implementation of PAR 1111 and will not be further analyzed in this Final EA. Since no significant land use and planning impacts were identified, no mitigation measures are necessary or required.

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	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>XI. MINERAL RESOURCES.</b> Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Project-related impacts on mineral resources will be considered significant if any of the following conditions are met:

- The project would result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- The proposed project results in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

**Discussion**

**XI. a) & b)** There are no provisions in PAR 1111 that would result in the loss of availability of a known mineral resource of value to the region and the residents of the state, or of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan. Some examples of mineral resources are gravel, asphalt, bauxite, and gypsum, which are commonly used for construction activities or industrial processes. Since the proposed project only affects the manufacture of natural gas-fired furnaces, PAR 1111 does not require and would not have any effects on the use of important minerals, such as those described above. Therefore, no new demand for mineral resources is expected to occur and significant adverse mineral resources impacts from implementing PAR 1111 are not anticipated.

Based upon these aforementioned considerations, significant mineral resources impacts are not expected from the implementation of PAR 1111. Since no significant mineral resources impacts were identified, no mitigation measures are necessary or required.

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	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
<b>XII. NOISE.</b> Would the project result in:				
a) Exposure of persons to or generation of permanent noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public use airport or private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Noise impact will be considered significant if:

- Construction noise levels exceed the local noise ordinances or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three decibels (dBA) at the site boundary. Construction noise levels will be considered significant if they exceed federal Occupational Safety and Health Administration (OSHA) noise standards for workers.
- The proposed project operational noise levels exceed any of the local noise ordinances at the site boundary or, if the noise threshold is currently exceeded, project noise sources increase ambient noise levels by more than three dBA at the site boundary.

**Discussion**

**XII. a)** PAR 1111 would provide manufacturers subject to Rule 1111 additional time to produce residential furnaces that meet the NOx emission limit of 14 ng/J, provide manufacturers an option to pay a per unit mitigation fee for each condensing, non-condensing, weatherized and mobile home furnace distributed or sold into the SCAQMD, and delay the compliance date for condensing (high efficiency) units from October 1, 2014 until April 1, 2015. PAR 1111 would not require any new development or require major modifications to buildings or other structures to comply with the proposed amended rule that would generate noise. Any new compliant equipment or mitigation fee units installed would not be expected to generate noise above the existing setting. All of the affected activities occur within existing facilities. Thus, the proposed

project is not expected to expose persons to the generation of excessive noise levels above current levels because no change in current operations is expected to occur as a result of the proposed project. It is expected that any facility affected by PAR 1111 would continue complying with all existing local noise control laws or ordinances.

**XII. b)** PAR 1111 is not anticipated to expose people to or generate excessive groundborne vibration or groundborne noise levels since no construction activities are expected to occur at the existing equipment locations and the affected equipment are not inherently noisy or create excessive vibrations.

**XII. c)** A permanent increase in ambient noise levels at the affected equipment locations above existing levels and low NOx combustion technology is not typically a noise intensive technology. The proposed project is unlikely to occur because any new equipment that would be installed as part of implementing PAR 1111 will be replacing existing equipment with the same or similar noise profiles. Therefore, the existing noise levels are unlikely to change and raise ambient noise levels in the vicinities of the existing equipment locations to above a level of significance in response to implementing PAR 1111.

**XII. d)** Implementation of PAR 1111 would not require major construction activities. Even if affected equipment locations are located near a public/private airport, there are no new noise impacts expected from any of the existing equipment locations as a result of complying with the proposed project. Thus, PAR 1111 is not expected to expose people residing or working in the project vicinities to excessive noise levels. See also the response to item XII.a).

Based upon these considerations, significant adverse noise impacts are not expected from the implementation of PAR 1111 and are not further evaluated in this Final EA. Since no significant noise impacts were identified, no mitigation measures are necessary or required.

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	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>XIII. POPULATION AND HOUSING.</b>				
Would the project:				
a) Induce substantial growth in an area either directly (for example, by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts of the proposed project on population and housing will be considered significant if the following criteria are exceeded:

- The demand for temporary or permanent housing exceeds the existing supply.
- The proposed project produces additional population, housing or employment inconsistent with adopted plans either in terms of overall amount or location.

**Discussion**

**XIII. a)** Because the installation of new equipment only requires minimal labor, it is expected that workers can be drawn from the existing labor pool in southern California. Further, the proposed project is not anticipated to generate any significant effects, either direct or indirect, on the District's population or population distribution as no additional workers are anticipated to be required at equipment locations subject to the proposed amendments. Human population within the jurisdiction of the SCAQMD is anticipated to grow regardless of implementing PAR 1111. As such, PAR 1111 will not result in changes in population densities or induce significant growth in population.

**XIII. b)** Because the proposed project is primarily located in existing residential and/or commercial areas, PAR 1111 is not expected to result in the creation of any industry that would affect population growth, directly or indirectly induce the construction of single- or multiple-family units, or require the displacement of people elsewhere.

Based upon these considerations, significant adverse population and housing impacts are not expected from the implementation of PAR 1111 and are not further evaluated in this Final EA. Since no significant population and housing impacts were identified, no mitigation measures are necessary or required.

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<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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**XIV. PUBLIC SERVICES.** Would the proposal result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:

	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
a) Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts on public services will be considered significant if the project results in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered government facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response time or other performance objectives.

**Discussion**

**XIV. a) & b)** PAR 1111 would only affect combustion equipment located in primarily residential settings, however, the affected units may also be found in small commercial buildings. The expected options for compliance with the proposed future NOx emission limits in PAR 1111 will involve the installation of new equipment at the end of the equipment’s useful life with low NOx burners that will be compliant with fire department standards. Mitigation fee units installed will also be expected to be compliant with fire department standards. No other physical modifications or changes associated with the implementation of PAR 1111 are expected. The overall amount of natural gas at any one equipment location over their current levels is not expected to change substantially or increase the chances for fires or explosions that could affect local fire departments. Finally, PAR 1111 is not expected to increase the need for security at affected equipment locations, which could adversely affect local police departments.

Because the proposed project does not require or involve the use of new hazardous materials or generate new hazardous waste, it will not generate an emergency situation that would require additional fire or police protection, or impact acceptable service ratios or response times.

**XIV. c) & d)** As indicated in discussion under item XIII. Population and Housing, implementing PAR 1111 would not induce population growth or dispersion because no additional workers are expected to be needed at the existing affected facilities. Therefore, with no increase in local population anticipated as a result of adopting and implementing PAR 1111, additional demand for new or expanded schools or parks is also not anticipated. As a result, no significant adverse impacts are expected to local schools or parks.

Based upon these considerations, significant adverse public services impacts are not expected from the implementation of PAR 1111 and are not further evaluated in this Final EA. Since no significant public services impacts were identified, no mitigation measures are necessary or required.

	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>XV. RECREATION.</b>				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment or recreational services?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts to recreation will be considered significant if:

- The project results in an increased demand for neighborhood or regional parks or other recreational facilities.
- The project adversely affects existing recreational opportunities.

**Discussion**

**XV. a) & b)** As discussed under “Land Use and Planning” above, there are no provisions in PAR 1111 that would affect land use plans, policies, or regulations. Land use and other planning considerations are determined by local governments. No land use or planning requirements would be altered by the adoption of PAR 1111, which only affects natural gas-fired furnaces. Further, PAR 1111 would not affect in any way affect district population growth or distribution (see Section XIII), in ways that could increase the demand for or use of existing neighborhood and regional parks or other recreational facilities or require the construction of new or expansion of existing recreational facilities that might have an adverse physical effect on the environment because it would not directly or indirectly increase or redistribute population.

Based upon these considerations, significant recreation impacts are not expected from the implementation of PAR 1111. Since no significant recreation impacts were identified, no mitigation measures are necessary or required.

	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
<b>XVI. SOLID/HAZARDOUS WASTE.</b>				
Would the project:				
a) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Comply with federal, state, and local statutes and regulations related to solid and hazardous waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

The proposed project impacts on solid/hazardous waste will be considered significant if the following occurs:

- The generation and disposal of hazardous and non-hazardous waste exceeds the capacity of designated landfills.

**Discussion**

**XVI. a) & b)** Compliance with PAR 1111 means installing new compliant units or replacing existing units at the end of their useful lifetime with units utilizing low NOx emissions technology or paying a mitigation fee option. Because affected equipment has a finite lifetime, it will ultimately have to be replaced at the end of its useful life. Affected equipment may be refurbished and used elsewhere or the scrap metal from replaced units has economic value and is expected to be recycled, so any solid or hazardous waste impacts specifically associated with PAR 1111 are expected to be minor. As a result, no substantial change in the amount or character of solid or hazardous waste streams is expected to occur. PAR 1111 is not expected to increase the volume of solid or hazardous wastes from affected facilities, require additional waste disposal capacity, or generate waste that does not meet applicable local, state, or federal regulations.

Based upon these considerations, PAR 1111 is not expected to increase the volume of solid or hazardous wastes that cannot be handled by existing municipal or hazardous waste disposal facilities, or require additional waste disposal capacity. Further, implementing PAR 1111 is not expected to interfere with any affected facility's ability to comply with applicable local, state, or federal waste disposal regulations. Since no solid/hazardous waste impacts were identified, no mitigation measures are necessary or required.

	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
<b>XVII. TRANSPORTATION/TRAFFIC.</b>				
Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d) Substantially increase hazards due to a design feature (e.g. sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**Significance Criteria**

Impacts on transportation/traffic will be considered significant if any of the following criteria apply:

- Peak period levels on major arterials are disrupted to a point where level of service (LOS) is reduced to D, E or F for more than one month.
- An intersection's volume to capacity ratio increase by 0.02 (two percent) or more when the LOS is already D, E or F.
- A major roadway is closed to all through traffic, and no alternate route is available.
- The project conflicts with applicable policies, plans or programs establishing measures of effectiveness, thereby decreasing the performance or safety of any mode of transportation.
- There is an increase in traffic that is substantial in relation to the existing traffic load and capacity of the street system.
- The demand for parking facilities is substantially increased.
- Water borne, rail car or air traffic is substantially altered.
- Traffic hazards to motor vehicles, bicyclists or pedestrians are substantially increased.
- The need for more than 350 employees
- An increase in heavy-duty transport truck traffic to and/or from the facility by more than 350 truck round trips per day
- Increase customer traffic by more than 700 visits per day.

### **Discussion**

**XVII. a) & b)** PAR 1111 affects equipment that is primarily located in existing residential and/or commercial areas and has no potential to adversely affect transportation. The expected options for compliance with the proposed future NO<sub>x</sub> emission limits in PAR 1111 will involve the installation of new compliant equipment at the end of the equipment's useful life or the payment of a mitigation fee option by the manufacturer. PAR 1111 would have no effect on existing equipment locations that would change or cause additional transportation demands or services. The implementation of PAR 1111 is not expected to adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities. The proposed amended rule will not change the current natural gas-fired furnace distribution system and will not change the replacement schedule of existing furnaces. Finally, no construction-related activities are expected to be associated with installing compliant or mitigation fee equipment.

Since no construction-related trips and no additional operational-related trips per facility are anticipated, the adoption of PAR 1111 is not expected to significantly adversely affect circulation patterns on local roadways or the level of service at intersections near affected facilities. Since no construction is required, no significant construction traffic impacts are anticipated.

**XVII. c)** The expected option for compliance with the proposed future NO<sub>x</sub> emission limits in PAR 1111 will involve the installation of new compliant equipment with low NO<sub>x</sub> emissions technology or the payment of a mitigation fee option by the manufacturer. However, PAR 1111 will not require operators of existing equipment to construct buildings or other structures that could interfere with flight patterns so the height and appearance of the existing structures are not expected to change. Therefore, implementation of PAR 1111 is not expected to adversely affect air traffic patterns. Further, PAR 1111 will not affect in any way air traffic in the region because it will not require transport of any materials by air.



**XVII. d)** No physical modifications are expected to occur by implementing PAR 1111. Therefore, no offsite modifications to roadways are anticipated for the proposed project that would result in an additional design hazard or incompatible uses.

**XVII. e)** Any equipment replacements associated with implementing PAR 1111 will likely occur in or about the same location within the confines of each existing equipment location such that no changes to emergency access at or in the vicinity of the affected equipment locations would be expected. As a result, PAR 1111 is not expected to adversely impact emergency access.

**XVII. f)** No changes to the parking capacity at or in the vicinity of the affected equipment locations are expected. Further, PAR 1111 is not expected to require additional workers, so additional parking capacity will not be required. Therefore, PAR 1111 is not expected to adversely impact on- or off-site parking capacity. PAR 1111 has no provisions that would conflict with alternative transportation, such as bus turnouts, bicycle racks, et cetera.

Based upon these considerations, PAR 1111 is not expected to generate significant adverse project-specific or cumulative transportation/traffic impacts and, therefore, this topic will not be considered further. Since no significant transportation/traffic impacts were identified, no mitigation measures are necessary or required.



	<b>Potentially Significant Impact</b>	<b>Less Than Significant With Mitigation</b>	<b>Less Than Significant Impact</b>	<b>No Impact</b>
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**XVIII. MANDATORY FINDINGS OF SIGNIFICANCE.**

a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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	Potentially Significant Impact	Less Than Significant With Mitigation	Less Than Significant Impact	No Impact
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**XVIII. a)** As discussed in the “Biological Resources” section, PAR 1111 is not expected to significantly adversely affect plant or animal species or the habitat on which they rely because the affected equipment is primarily located in existing residential and/or commercial areas which have already been greatly disturbed and that currently do not support such habitats. Additionally, special status plants, animals, or natural communities are not expected to be found within close proximity to the facilities affected by PAR 1111.

**XVIII. b)** Based on the foregoing analyses, cumulative impacts in conjunction with other projects that may occur concurrently with or subsequent to the proposed project are not expected to adversely impact any environmental topic. Related projects to the currently proposed project include existing and proposed amended rules and regulations, as well as AQMP control measures, which produce emission reductions from most industrial and commercial sectors. Furthermore, because PAR 1111 does not generate project-specific impacts, cumulative impacts are not considered to be "cumulatively considerable" as defined by CEQA guidelines §15065(a)(3). For example, the environmental topics checked ‘No Impact’ (e.g., aesthetics, agriculture resources, air quality, biological resources, cultural resources energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste and transportation and traffic) would not be expected to make any contribution to potential cumulative impacts whatsoever. Also, in the case of air quality impacts, the net effect of implementing the proposed project with other proposed amended rules and regulations, and AQMP control measures is an overall reduction in District-wide emissions (with the use of the mitigation fees for emission reduction projects), thus, contributing to the attainment of state and national ambient air quality standards. Therefore, it is concluded that PAR 1111 has no potential for significant cumulative or cumulatively considerable impacts in any environmental areas.

**XVIII. c)** Based on the foregoing analyses, PAR 1111 is not expected to cause significant adverse effects to human beings. Significant adverse air quality impacts are not expected from

the implementation of PAR 1111. Based on the preceding analyses, no significant adverse impacts to aesthetics, agriculture resources, biological resources, cultural resources, energy, geology and soils, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, noise, population and housing, public services, recreation, solid/hazardous waste and transportation and traffic are expected as a result of the implementation of PAR 1111.

As discussed in items I through XVIII above, the proposed project would have no potential to cause significant adverse environmental effects.

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**APPENDIX A**

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**PROPOSED AMENDED RULE 1111**

## ATTACHMENT F

(Adopted December 1, 1978)(Amended July 8, 1983)(Amended November 6, 2009)

~~(Draft — August 6, 2014 date of adoption)~~

### **PROPOSED AMENDED RULE 1111. — REDUCTION OF NO<sub>x</sub> EMISSIONS FROM NATURAL-GAS-FIRED, FAN-TYPE CENTRAL FURNACES**

(a) Purpose and Applicability

The purpose of this rule is to reduce NO<sub>x</sub> emissions from natural gas-fired, fan-type central furnaces, as defined in this rule. This rule applies to manufacturers, distributors, sellers and installers of residential and commercial fan-type central furnaces, requiring either single-phase or three-phase electric supply, used for comfort heating with a rated heat input capacity of less than 175,000 BTU per hour, or, for combination heating and cooling units, a cooling rate of less than 65,000 BTU per hour.

(b) Definitions

- (1) ANNUAL FUEL UTILIZATION EFFICIENCY (AFUE) is defined in Section 10.1 of Code of Federal Regulations, Title 10, Part 430, Subpart B, Appendix N.
- (2) BTU means British thermal unit or units.
- (3) CONDENSING FURNACE means a high-efficiency furnace that uses a second heat exchanger to extract the latent heat in the flue gas by cooling the combustion gasses to near ambient temperature so that water vapor condenses in the heat exchanger, is collected and drained.
- (4) FAN TYPE CENTRAL FURNACE is a self-contained space heater providing for circulation of heated air at pressures other than atmospheric through ducts more than 10 inches in length that have:
  - (A) a RATED HEAT INPUT CAPACITY of less than 175,000 BTU per hour; or
  - (B) for combination heating and cooling units, a cooling rate of less than 65,000 BTU per hour.
- (5) HEAT INPUT means the higher heating value of the fuel to the furnace measured as BTU per hour.

- (6) NO<sub>x</sub> EMISSIONS means the sum of nitrogen oxide and nitrogen dioxide (oxides of nitrogen) in the flue gas, collectively expressed as nitrogen dioxide.
  - (7) RATED HEAT INPUT CAPACITY means the gross HEAT INPUT of the combustion device.
  - (8) RESPONSIBLE OFFICIAL means:
    - (A) For a corporation: a president or vice-president of the corporation in charge of a principal business function or a duly authorized person who performs similar policy-making functions for the corporation, or
    - (B) For a partnership or sole proprietorship: general partner or proprietor, respectively.
  - (9) SINGLE FIRING RATE means the burners and control system are designed to operate at only one fuel input rate and the control system cycles burners between the maximum heat output and no heat output.
  - (10) USEFUL HEAT DELIVERED TO THE HEATED SPACE is the AFUE (expressed as a fraction) multiplied by the heat input.
  - (11) VARIABLE FIRING RATE means the burners and control system are designed to operate at more than one fuel input rate and the control system cycles burners between two or more heat output rates and no heat output.
  - (12) WEATHERIZED means designed for installation outside of a building, equipped with a protective jacket and integral venting, and labeled for outdoor installation.
- (c) Requirements
- (1) A manufacturer shall not, after January 1, 1984, manufacture or supply for sale or use in the South Coast Air Quality Management District natural-gas-fired, fan-type central furnaces, unless such furnaces meet the requirements of paragraph (c)(3).
  - (2) A person shall not, after April 2, 1984, sell or offer for sale within the South Coast Air Quality Management District natural-gas-fired, fan-type central furnaces unless such furnaces meet the requirements of paragraph (c)(3).
  - (3) Natural-gas-fired, fan-type central furnaces shall:

- (A) not emit more than 40 nanograms of oxides of nitrogen (calculated as NO<sub>2</sub>) per joule of useful heat delivered to the heated space; and
  - (B) be certified in accordance with subdivision (d) of this rule.
- (4) On or after October 1, 2012, a person shall not manufacture, supply, sell, offer for sale, or install, for use in the South Coast Air Quality Management District, natural-gas-fired, fan-type central furnaces subject to this rule, unless such furnace complies with the applicable emission limit and compliance date set forth in Table 1 and is certified in accordance with subdivision (d) of this rule.

Table 1 – Furnace NOx Limits and Compliance Schedule

Compliance Date	Equipment Category	NOx Emission Limit (nanograms/Joule *)
October 1, 2012	Mobile Home Furnace	40
<del>October</del> <u>April 1, 2014</u> <del>2015</del>	Condensing Furnace	14
October 1, 2015	Non-condensing Furnace	14
October 1, 2016	Weatherized Furnace	14
October 1, 2018	Mobile Home Furnace	14

\* Nanograms of oxides of nitrogen (calculated as NO<sub>2</sub>) per joule of useful heat delivered to the heated space

(5) Any manufacturer of fan-type central furnaces regulated by this rule may elect to pay a per unit mitigation fee of \$200 for each condensing furnace and \$150 for each non-condensing, weatherized or mobile home furnace distributed or sold into the SCAQMD in lieu of meeting the 14 nanogram/Joule NOx emission limit in Table 1 of paragraph (c)(4) of this rule. A manufacturer may elect to pay the per unit mitigation fee for a time period of no more than 36 months after the applicable compliance date in Table 1 of paragraph (c)(4). A manufacturer shall submit an alternate compliance plan for each 12 month time period after the applicable compliance date during which the manufacturer elects to pay the mitigation fee in lieu of meeting the NOx emission limit.

(A) Any manufacturer electing to comply using this mitigation fee option shall submit to the SCAQMD an alternate compliance plan no later than 60 days prior to the applicable compliance date that includes the following:

- (i) a letter with the name of the manufacturer requesting the mitigation fee compliance option signed by a responsible official identifying the category of fan-type central furnaces and the 12 month alternate compliance period that the mitigation fees cover;
- (ii) an estimate of the quantity of applicable Rule 1111 fan-type central furnaces to be distributed or sold into the SCAQMD during the alternate compliance period, which estimate shall be based on total distribution and sales records or invoices of condensing, non-condensing, weatherized or mobile home fan-type central furnaces that were distributed or sold into the SCAQMD during the 12 month period of July 1 to June 30 prior to the applicable compliance date, along with supporting documentation;
- (iii) a completed SCAQMD Form 400A with company name, identification that application is for an alternate compliance plan (section 7 of form), identification that the request is for the Rule 1111 mitigation fee compliance option (section 9 of form), and signature of the responsible official;
- (iv) a check for payment of the alternate compliance plan filing fee (Rule 306, section (c)), ~~and~~
- ~~(v) an additional separate check for payment of the mitigation fees for the applicable 12 month alternate compliance period.~~
- (B) The manufacturer shall submit to the Executive Officer a report signed by the responsible official for the manufacturer identifying by model number the quantity of Rule 1111 fan-type central furnaces actually distributed or sold into SCAQMD and a check for payment of mitigation fees for the applicable 12 month alternate compliance period for the quantity of applicable Rule 1111 fan-type central furnaces distributed or sold into the SCAQMD during the alternate compliance period. ~~If the actual quantity of units distributed or sold into SCAQMD exceed the quantity estimated pursuant to subparagraph (e)(5)(A)(ii), the manufacturer shall submit, along with the report, payment of mitigations fees for each such additional unit in excess of the~~



~~estimated quantity. If the actual quantity of units distributed or sold into SCAQMD are less than the estimated quantity pursuant to subparagraph (c)(5)(A)(ii), the manufacturer may submit, along with the report, a request for reimbursement of mitigation fees paid for each additional unit in excess of the actual quantity distributed or sold into SCAQMD. The report, and the payment of additional mitigation fees, and the request for reimbursement must be submitted to the SCAQMD no later than thirty (30) days after the end of each 12-month mitigation fee alternate compliance period.~~

(d) Certification

- (1) The manufacturer shall have each appliance model tested in accordance with the following:
  - (A) Oxides of nitrogen measurements, test equipment, and other required test procedures shall be in accordance with AQMD Method 100.1.
  - (B) Operation of the furnace shall be in accordance with the procedures specified in Section 4.0 of Code of Federal Regulations, Title 10, Part 430, Subpart B, Appendix N.
- (2) One of the two formulas shown below shall be used to determine the nanograms of oxides of nitrogen per joule of useful heat delivered to the heated space:

$$N = \frac{4.566 \times 10^4 \times P \times U}{H \times C \times E}$$

$$N = \frac{3.655 \times 10^{10} \times P}{(20.9 - Y) \times Z \times E}$$

Where:

N = nanograms of emitted oxides of nitrogen per joule of useful heat.

P = concentration (ppm volume) of oxides of nitrogen in flue gas as tested.

U = volume percent CO<sub>2</sub> in water-free flue gas for stoichiometric combustion.

H = gross heating value of fuel, BTU/cu.ft. (60°F, 30-in. Hg).

C = measured volume percent of CO<sub>2</sub> in water-free flue gas, assuming complete combustion and no CO present.

E = AFUE, percent (calculated using Table 2).

Y = volume percent of O<sub>2</sub> in flue gas.

Z = heating value of gas, joules/cu. meter (0.0°C, 1 ATM).

- (3) At least 120 days prior to the date a furnace model is first shipped to a location in the AQMD for use in the District, the manufacturer shall submit to the Executive Officer the following:
- (A) A statement that the model is in compliance with subdivision (c). (The statement shall be signed by a responsible official and dated, and shall attest to the accuracy of all statements.)
  - (B) General Information
    - (i) Name and address of manufacturer.
    - (ii) Brand name.
    - (iii) Model number, as it appears on the furnace rating plate.
  - (C) A description of the furnace and specifications for each model being certified.
  - (D) Executive Officer approved emission test protocol and emission test results verifying compliance with the applicable NO<sub>x</sub> limit specified in Table 1.
- (e) Identification of Compliant Units
- (1) The manufacturer of the furnace complying with subdivisions (c) and (d) shall display the following on the shipping container label and rating plate of the furnace:
    - (A) Model number;
    - (B) Heat input capacity;
    - (C) Applicable NO<sub>x</sub> emission limit in Table 1; and
    - (D) Date of manufacture or date code.
  - (2) Any non-certified furnace shipped to a location in the South Coast Air Quality Management District for distribution or sale outside of the District shall have a label on the shipping container identifying the furnace as not certified for use in the District.
- (f) Enforcement
- The Executive Officer may periodically conduct such tests as are deemed necessary to ensure compliance with subdivision (c), (d), (e) and (h).

(g) Exemptions

- (1) The provisions of this rule shall not apply to furnaces installed in mobile homes before October 1, 2012.
- (2) For furnaces manufactured, purchased and delivered to the South Coast Air Quality Management District prior to the applicable compliance date in Table 1, any person may, until 300 days after the applicable compliance date, sell, offer for sale, or install such a furnace in the District, so long as the furnace meets the requirements of paragraph (c)(3) and subdivisions (d) and (e).

(h) Rebate Incentives for Early Compliance

Any manufacturer of natural gas-fired, fan-type central furnaces subject to this rule that distributes and sells into the District furnaces that comply with the 14 nanograms/Joule emission limit 90 days prior to the applicable compliance date in Table 1 of paragraph (c)(4) may submit a compliance plan for early compliance to the Executive Officer and to receive on a first-come first-served basis from the AQMD a rebate payment of \$75 for each 14 nanograms/Joule certified furnace and \$90 for each high efficiency 14 nanograms/Joule certified furnace with AFUE of 90% or greater distributed and sold into the District, provided funds are available on the date documentation on the number of units distributed and sold is submitted to the AQMD. Total rebate payments to all manufacturers shall not exceed \$3,000,000.

(i) Technology Assessment

On or before April 1, 2013, the Executive Officer shall conduct a technology assessment and shall report to the Governing Board on the status of manufacturers' progress towards compliance with the 14 nanograms/Joule emission limit for nitrogen oxides.

**APPENDIX B**

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**PAR 1111 RULE AMENDMENT INVENTORY**

**PAR 1111 Rule Amendment Inventory (6 month delay of condensing furnaces)**

SOURCE: 2012 AQMP Source Category Emissions, SoCal Gas Inventory Data and 2010 Census Data

(Assumes mitigation fee offsets emissions from mitigation fee program)

**BASELINE INVENTORY (HighEff @ EstCalifAvg; Emission and Emission Reductions (T/d))**

	2002 Baseline	2014 Baseline	Baseline Used	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total tons per day	9.7	10.5	10.5	0.005	0.009	0.093	0.358	0.654	0.950	1.253	1.557	1.860	2.163	2.467	2.770	3.073	3.377	3.680	3.983
% Mobile		4 %		0.0047	0.0093	0.0140	0.019	0.023	0.028	0.033	0.037	0.042	0.047	0.051	0.056	0.061	0.065	0.070	0.075
									0.007	0.015	0.022	0.030	0.037	0.045	0.052	0.060	0.067	0.075	
<b>% Condensing</b>		15 %				0.0114	<b>0.057</b>	0.102	0.148	0.193	0.239	0.284	0.330	0.375	0.421	0.466	0.512	0.557	0.603
% Non-Condensing		71 %					0.054	0.269	0.485	0.700	0.915	1.131	1.346	1.561	1.777	1.992	2.208	2.423	2.638
% Weatherized		10 %						0.008	0.038	0.068	0.099	0.129	0.159	0.190	0.220	0.250	0.281	0.311	0.341
		100 %		0.005	0.009	0.025	0.129	0.403	0.698	1.002	1.305	1.608	1.912	2.215	2.518	2.822	3.125	3.428	3.732

**ADJUSTED INVENTORY AFTER 6 MONTH DELAY (HighEff @ EstCalifAvg; Emission and Emission Reductions (T/d))**

	2002 Baseline	2014 Baseline	Baseline Used	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027
Total tons	9.7	10.5	10.5	0.005	0.009	0.093	0.358	0.654	0.950	1.253	1.557	1.860	2.163	2.467	2.770	3.073	3.377	3.680	3.983
% Mobile		4 %		0.0047	0.0093	0.0140	0.019	0.023	0.028	0.033	0.037	0.042	0.047	0.051	0.056	0.061	0.065	0.070	0.075
										0.007	0.015	0.022	0.030	0.037	0.045	0.052	0.060	0.067	0.075
<b>% Condensing</b>		15 %				0.0000	<b>0.034</b>	0.080	0.125	0.171	0.216	0.262	0.307	0.353	0.398	0.444	0.489	0.535	0.580
% Non-Condensing		71 %					0.054	0.269	0.485	0.700	0.915	1.131	1.346	1.561	1.777	1.992	2.208	2.423	2.638
% Weatherized		10 %						0.008	0.038	0.068	0.099	0.129	0.159	0.190	0.220	0.250	0.281	0.311	0.341
		100 %		0.005	0.009	0.014	0.107	0.380	0.676	0.979	1.282	1.586	1.889	2.192	2.496	2.799	3.102	3.406	3.709

**Baseline - Adjusted Inventory: 0.057 - 0.034 = 0.023 tpd (46 lbs/day)**