



# GAMA-An Association of Appliance & Equipment Manufacturers

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## Product Divisions and Groups

Burner  
Controls  
Corrugated  
Stainless Steel  
Tubing  
Direct Fired  
Heater  
Direct Heating  
Food Service  
Equipment  
Fuel Cell  
Furnace  
Gas Air  
Conditioning  
Gas Appliance  
Connector  
Gas Detector  
Gas Equipment  
& Service  
Gas Grill  
Gas Venting  
Products  
General Products  
Hydronics  
Institute  
Industrial Forced-  
Air Heating  
Infrared  
Motor & Blower  
Power  
Generation  
Relief Valve  
Vent Free Gas  
Products  
Water Heater

December 1, 2006

Mr. Joseph C. Cassmassi  
Planning, Rules Development and Area Sources  
South Coast Air Quality Management District  
21865 Copley Drive  
Diamond Bar, California 91765-4178

Dear Mr. Cassmassi:

GAMA is a national trade association whose membership includes the manufacturers of gas furnaces, boilers, water heaters and room heaters. GAMA's manufacturer members account for nearly all of residential gas fired space and water heating appliances sold in the district. We have reviewed the draft 2007 Air Quality Management Plan and submit the following comments on behalf of those manufacturers.

### General

We are encouraged by the district's recognition that the most significant measures that can reduce NOx emissions involve mobile (off road and on road) sources. We further recognize the staff's dedication to do what it can within its authority to improve the air quality in the district. We ask that as the final AQMP is developed the staff consider the relative benefit of the specific control measures and the effect on the product addressed by each measure in terms of the overall level of the related pollutant in the district.

### CMB-03

The proposal to lower the NOx emission limit for residential gas furnaces to 14 ng/joule by 2011 is too stringent. The staff's preliminary analysis that burner technologies (i.e. pre-mix burners) currently being used on commercial boilers to achieve lower levels of NOx emissions can be applied to residential gas furnaces is flawed. One characteristic of pre-mix burners is that they create a positive pressure in the combustion chamber and heat exchanger. A major safety feature inherent in current designs of residential gas furnace heat exchangers is that the products of combustion flow through the heat exchanger under a negative pressure. The safety benefit lies in the fact that if the heat exchanger develops any flaws (holes or cracks), the leakage will be "room" air entering the heat exchanger, not products of combustion exiting the heat exchanger into the heated room air. Products of combustion leaking out of the heat exchanger is the start of a sequence that may result

in dangerous levels of carbon monoxide in the living space. This underscores a more fundamental principle; various types of gas appliances such as water heaters, boilers and furnaces may share a common fuel but they are distinct products with unique features and designs. Particularly on matters such as NO<sub>x</sub> emissions, it can not be assumed that emission reduction technologies are easily transferred from one type of appliance to another.

Also, we note that the staff itself characterized ozone as “summer smog” in the presentation on the draft AQMP prepared for the series of public workshops held during the last few weeks. It has been very clearly explained that the need for further NO<sub>x</sub> emission reduction is driven by the need to reduce ozone levels. What is not clear is whether the district has properly evaluated the benefit of reducing NO<sub>x</sub> emissions from residential furnaces, which operate during the winter, in relation to the primary objective of reducing the ozone in the atmosphere during the summer months. We do not understand how the “Control Measure Summary” can show any NO<sub>x</sub> reduction in the Summer Planning Inventory section. In a climate such as that found in the SCAQMD we question whether there are any residential gas furnaces operating during the summer. We would appreciate a detailed explanation as to the source of those summer inventory emission values. Furthermore, even the summary shows that the summer NO<sub>x</sub> reduction in 2014 would only be .4 tons/day. Recognizing the primary objective of this measure, we believe the control cost should be recalculated based on this “summer” benefit rather than the annual reduction estimate of 1 ton/day.

While we can not support the proposed reduction to 14 ng/joule, we recognize that there may be NO<sub>x</sub> emission reducing technologies that can be applied to residential gas furnaces. However, based on our current information, the only ones that could be applied to a furnace with a three or four year lead time are the technologies that do not require major redesign and which only provide modest reductions in NO<sub>x</sub> emissions. We propose that the SCAQMD join the GAMA residential furnace manufacturer members in sponsoring a feasibility study to identify the candidate technologies that could be practically applied to gas furnaces and quantify the associated NO<sub>x</sub> emission reductions.

### MCS-03

This measure provides few specific details on which to comment. While we support the concept of further incentives to encourage consumers to purchase higher efficiency products, we hope that the staff can provide more specific information on the implementation of this measure.

We also have the following questions regarding the draft 2007 AQMP. If the staff can provide some information in response to these questions it will help us better understand the AQMP.

Mr. Cassmassi  
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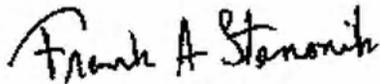
Are the ton/day emission values shown in the draft AQMP based on an average day or a peak day? If it is an average day, does the district have information on the emissions on peak days?

Can the staff provide the detailed calculations for determining the cost effectiveness values shown in CMB-03?

Are the days when the ozone standard in the district is exceeded concentrated around several months or do they occur throughout the year?

Please feel free to contact me if you have any questions regarding our comments.

Sincerely,

A handwritten signature in black ink that reads "Frank A. Stanonik". The signature is written in a cursive, slightly slanted style.

Frank A. Stanonik  
Chief Technical Advisor