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August 27, 2004

Ms. Dorothy Shimer
Research Division, 5th floor
Air Resources Board
P.O. Box 2815
Sacramento, California 95812

Dear Ms. Shimer:

RE: Comments on “Indoor Air Pollution in California” a Draft Report to the California Legislature

The Association of Home Appliance Manufacturers (“AHAM”) represents the manufacturers of major, portable, and floor care appliances. We appreciate the opportunity to provide comments on the Report to the California Legislature – Indoor Air Pollution in California (the “Draft Report”). AHAM member companies understand that Indoor Air Quality (“IAQ”) is a serious issue and want to ensure that their products do not diminish the quality of indoor air. In fact, AHAM participates in a number of councils and standards development groups which create product standards that are designed to have a positive impact on IAQ

After reviewing carefully the Draft Report, we are concerned about some of its assertions, assumptions and recommendations, as outlined below.

I. THE DRAFT REPORT DOES NOT ADDRESS IMPORTANT THRESHOLD IAQ ISSUES

The Draft Report makes broad statements about the health effects of various indoor pollutants and chemicals, but does not substantiate any of these claims. For example, there are references to several studies in the Draft Report but none that directly connect the levels at which many of these chemicals are found in homes and deleterious health effects. Before any legislative action can be taken to improve IAQ in California, as the Draft Report suggests is a necessity, we believe direct evidence of the chemicals found currently in California homes, at what levels, and the relationship to health concerns must be better explained and established. A survey of homes, dwellings, businesses and other public places for the present environment could develop such a baseline data set from which to build.

II. THE REPORT UTILIZES INCORRECT DATA AND ASSUMPTIONS

A. AHAM Air Cleaner Certification Program

AHAM members who manufacture portable room air cleaners have long been involved in and dedicated to improving the quality of the indoor air environment. The Draft Report suggests that consumers need more information on air cleaners,¹ but ignores AHAM's Certification Program for Room Air Cleaners. This long-standing AHAM Program, sponsored by our association since 1989, provides for third-party verification testing by an independent laboratory, and is described in detail on a web site dedicated to assisting consumers in their purchase of the most appropriate type of air cleaner for their environment. We invite the Board to view the Program's website www.cadr.org which describes the Clean Air Delivery Rate ("CADR"), or volume of filtered air delivered by an air cleaner, used to measure the efficacy for all AHAM certified air cleaners. Ratings are available for tobacco smoke, pollen and dust; the higher the CADR number, the more air the unit filters. We ask that the final report provide information on this important program.

B. Emissions from Un-vented Gas Appliances

The Draft Report fails to recognize that standards for emissions of chemicals from un-vented gas fueled appliances, such as gas stoves and ovens, currently exist. The Z21/83 Committee, which develops American National Standards Institute ("ANSI") voluntary consensus standards, has a well-established standard for the safety of gas ranges/ovens that establishes conservative and safe emission levels for carbon monoxide that has been in place since the early 1900's.

All AHAM members who manufacture gas ranges meet these standards in their products. More importantly, the effectiveness of these standards are not disputed: a recent study by the Gas Research Institute has found that despite the configuration of new homes today, the ANSI/Z21/83 standards have such a high margin of safety that they do not need to be changed.² We ask that this information also be added to the final report.

C. Misleading Assumptions and Data

We also want to point out that the magnitude of any perceived problem with gas ranges and ovens must be kept in perspective and that the focus of the Draft Report should not be on problems associated with Carbon Monoxide. For example, the Consumer Product Safety Commission ("CPSC") has produced data that indicates over the period 1999 to 2001 there was an average of 126 annual non-fire, carbon monoxide poisoning deaths nationally. Of these only

¹ "...requirements for a pollutant removal efficiency rating would assist the consumer in making decisions when purchasing an air cleaner." (See p. 16)

² Gas Research Institute, "Critique of ANSI Z21.1 Standard for CO Emissions From Gas-Fired Ovens and Ranges." GRI-96/0270, September 1996.

9 involved gas ranges or ovens.³ Since California has 11.9% of the U.S. population and 10.5% of the U.S. households, this implies that less than one death per year in California might even be attributable to gas range or oven poisonings. And, no deaths were attributed to the use of gas dryers, room air conditioners, dehumidifiers or room air cleaners – the other household appliances mentioned in the draft report. We believe that public education regarding proper use and maintenance of appliances provides the lowest cost, most effective approach to dealing with problems of such modest magnitude. While even one death is too many, we strongly believe that public education and outreach can make a real and lasting impact.

In 2003 the National Fire Protection Association (“NFPA”) published a report on home cooking fires which established that for the years 1994 to 1998, only seven deaths involving home cooking equipment might be attributed to non-fire carbon monoxide poisoning nationwide.⁴ In addition, a related CPSC study established that during the years 1992 to 1996, 74% of all the product-related non-fire carbon monoxide poisoning deaths might have been the result of problems associated with heating systems and only 4% might have been due to gas ranges or ovens.⁵ As most heating systems are vented, these statistics clearly indicate that un-vented gas cooking products are not a significant source of carbon monoxide poisoning.

In addition, the CPSC data described above does not distinguish between deaths as a result of normal usage of gas ranges and ovens and those deaths that were the result of non-recommended and clearly abusive practices (i.e. consumers using a gas range or oven to heat a home, not properly maintained, or blocking the oven vents). While AHAM does not have data on these abusive situations, we do recognize such activities will clearly result in increased burner on time and potentially incomplete combustion, which would generate larger amounts of carbon monoxide than normal cooking conditions would generate. Consequently, abusive use is far more likely to lead to carbon monoxide poisoning than normal cooking conditions. Since even the CPSC, after conducting a study of abusive use, determined that product changes were not required and only requested stronger warnings against such use in product instructions, the final report must distinguish between abusive use and normal use.⁶ We ask that the data in this section of the Draft Report be reexamined.

Furthermore, we believe that some of the basic consumer usage data provided in the Draft Report is incorrect. For example:

- Figure ES-1 indicates that Californians spend 14.9 hours per day (i.e. 62% of their time) in their home. Given that 62.3% of Californians are employed (per Statistical Abstract of the United States), this data seems questionable. If the 62.3% of the population who are employed spend 10 hours out of the home (e.g. 8 hours on the job

³ Consumer Product Safety Commission Report, “Non-Fire Carbon Monoxide Deaths Associated with the Use of Consumer Products: 2001 Annual Estimates.” May 13, 2004.

⁴ NFPA Fire Analysis and Research, “Home Cooking Fire Patterns.” Table 9. “U.S. Non-Fire Carbon Monoxide Deaths Involving Home Cooking Equipment. October 2003.

⁵ Consumer Product Safety Review. “CO Poisoning”, Fall 1999, Vol.4, No. 2

⁶ Consumer Product Safety Commission Memo, “Carbon monoxide (CO) emissions from residential gas ranges: projected consumer exposure and related health concerns” to CSA International, August 24, 2000.

plus a one hour commute each way), the remaining 37.8% of the population would have to spend 22.9 hours per day in their homes for the average of 14.9 hour to be accurate.

As a result, if 62.3% were to spend 12 hours away from home engaged in employment, the non-working remainder of the population must spend 19.6 hours per day cloistered in their homes in order to achieve the 14.9 hour average. We ask that more accurate figures be included in the final report.

The Draft Report also frequently makes assertions without presenting data or facts and/or other credible bases for a conclusion. For example:

- The Draft Report suggests that poorly maintained products are a source of Biological Agents (See p. 28). We are not aware of any such concerns from the consumers of our industry's products. In addition, such contaminants are produced by and are the result of consumer usage habits and cannot be rectified through different design or external venting. It is recommended that this concern, if it is in fact significant, be addressed through consumer education. Consumer education can be effective, for example, several years ago, AHAM took the lead in working with the CPSC and developing cleaning guidelines for humidifiers. Through research and testing, these cleaning guidelines were shown to be effective. The industry adopted as voluntary guidelines these cleaning guidelines. This is an example of industry meeting a need and working with government to help consumers properly maintain their products and reduce indoor air burdens. If this is not a significant concern, we suggest that this section be deleted.
- The Draft Report incorrectly states that the exhaust hoods are not used above gas stoves (See p. 7). We ask that the final report deleted this inaccurate statement.
- Table ES-2 indicates that the "Health End Point" costs of carbon monoxide poisoning are \$0.15 billion, the second smallest amount of the eight factors cited in the table and less than ½ of 1% of all costs shown in the Table. As a result, the priorities described in the Draft Report to improve IAQ should be rearranged to reflect the benefits. On that basis, we believe carbon monoxide poisoning, in so far as it involves IAQ, should be a very low priority.
- Table ES-1 cites malfunctioning of poorly maintained products as major sources of CO, NO₂ and Biological Agents. While the merits of this argument could be debated, the correct remedy is not appliance re-design, but instead consumer usage habits. Consumer education regarding the benefits of proper appliance maintenance would be more effective than added regulation. We note that the Draft Report appears to concur with this when it indicates in Table ES-3, footnote 3 that "Public education ... should also be used where appropriate." Indeed, we urge that the Air Resources Board place public education at the top of the list of improvements, based on the opportunity for low cost, high impact improvements in IAQ. In addition, AHAM

stands ready to provide input into such programs and to assist in their delivery, where appropriate.

To make the Draft Report's assertions and recommendations more credible, they should be based on established facts, not supposition. We ask that the final report contain such facts.

III. THE DRAFT REPORT MISCHARACTERIZES THE IAQ PROBLEMS ASSOCIATED WITH APPLIANCE PRODUCTS

A. Air Cleaners

The Draft Report notes that ozone and devices that produce ozone have been identified as a health risk. This statement needs to be qualified as there are many devices in the home and office environment that generate very small amounts of ozone. In fact, most devices that use electricity will produce some level of ozone. The undesirable level of ozone emitted is the key to any perceived problem and must be further defined with actual values. Indeed, the chief source of indoor ozone has been shown in most cases to be outdoor ozone.

Currently all of the air cleaners certified under the AHAM certification program comply with the safety requirements of the ANSI/UL standards of safety and, according to the provisions of safety certification agencies, are tested to show they do not exceed the EPA or OSHA standards for indoor levels of Ozone. The "air cleaners" that are mentioned in the Draft Report include "Ozone Generators" which are appliances that by their very nature generate magnitudes more ozone than a simple ionizer stage of a media type air filter. We ask that this section of the Draft Report be changed to address this important fact and explain that most air cleaners do not fall into this category of ozone generators.

B. Gas Clothes Dryers

The Draft Report establishes that Gas Clothes Dryers have the potential to produce harmful emissions. It must be noted, however, that these products are already exhausted externally and therefore properly functioning units cannot adversely impact IAQ. As such, emissions regulations are inappropriate and would only increase the administrative burden on manufacturers. We ask that this section of the Draft Report be deleted.

C. Gas Ranges, Stoves and Ovens

We disagree with the prioritization of gas ranges, stoves, and ovens for mitigation⁷ and are particularly concerned with several sections related to this issue in the Draft Report. The authors did not separate IAQ issues with appropriate cooking appliances from the inappropriate indoor use of outdoor cooking appliances, such as charcoal grills and hibachis. That would

⁷ Table ES-3 establishes the Draft Reports prioritization of pollutant sources that should be mitigated. The third item on the list is combustion appliances (i.e. gas & propane stoves, ovens, furnaces, heaters, woodstoves and fireplaces). Under the column identifying potential approaches to mitigation the recommendations are: emission limitations, active exhaust ventilation, safety devices, product-use restrictions, product re-design, and improved venting.

reduce the already minor incidence of reported non-fire cooking carbon monoxide poisonings to a level much lower than otherwise presented. We ask that this section of the report be modified accordingly.

It is important to note that by definition, the combustion of natural gas creates by-products, and so zero-emitting gas appliances are not technologically feasible. However, gas appliance products are designed and built to conform to the exacting standards set by the ANSI Z21/83 committee, a voluntary organization that develops ANSI consensus standards as described above. We ask that the Draft Report provide information on these standards, and if there is an interest in making changes to ANSI/Z21/83 standards that they should be done through the procedures established for standards development and maintenance that have been in place since for many years.

We also believe that it is important for the Draft Report to recognize that gas cooking products are by their very nature used intermittently. They are not a continuous-use appliance or hot water heater. Even so, there have been studies to examine the emissions of these products. The CPSC recently conducted tests and evaluated the adequacy of the present air-free carbon monoxide emission limit in the ANSI Z21.1 standard and concluded that it is adequate.⁸ The current air-free carbon monoxide emission limit is based on burning 60,000 BTU/hour of gas in a room of 1,000 cubic feet with four air changes per hour as well as a temperature rise of 70 degrees. Even though today's homes are constructed so that the air changes per hour may be lower, an average home or apartment is much larger than 1,000 cubic feet. Thus, the test is based on conditions that are well above the heating situation in a dwelling, in order to adequately test the very small emissions of carbon monoxide. As a result, the CPSC found that the current air-free CO emission level is still a valid and stringent requirement and that there is no need to consider changes at this time.⁹ The final report should reflect this.

Furthermore, standing pilot gas ranges and ovens are not sold in California (except those without an electric cord and subject to standing pilot BTU restrictions) and as a result, there is no continuous source of fuel burning on new appliance cooking products. In fact, Southern California Gas Company and San Diego Gas & Electric Company conducted a study of the period of 1992 to 1995 and concluded that "in regards to CO and NO₂ the single most contributing factor influencing variability of indoor concentrations was outdoor concentrations."¹⁰

Overall, AHAM believes that public education is an important recommendation that the Board should consider. Any problems that arise with the emissions from these products, can be addressed through education as to proper operation.

⁸ Consumer Product Safety Commission Memo, "Carbon monoxide (CO) emissions from residential gas ranges: projected consumer exposure and related health concerns" to CSA International, August 24, 2000.

⁹ Consumer Product Safety Commission Memo, "Carbon monoxide (CO) emissions from residential gas ranges: projected consumer exposure and related health concerns" to CSA International, August 24, 2000.

¹⁰ California Residential Indoor Air Quality Study. Vol.3, Section 7, "Conclusions and Recommendations." Sponsored by GRI, PG&E, San Diego Gas & Electric Company, and Southern California Gas Company.

D. Vacuum Cleaners

The report does not take into consideration the benefits to IAQ of an appliance such as a vacuum cleaner. This type of appliance is the key in maintaining a clean home or work environment necessary to defeat the proliferation of dust mites and other biological and particulate materials.

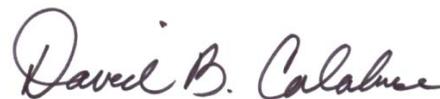
In addition, the Draft Report does not place any responsibility or obligation on the end-user. As with any appliance, proper maintenance of the appliance must be followed and is primarily the responsibility of the end-user. The Draft Report recognizes the benefits of parental education as it relates to cigarette smoke and the importance of consumer education. But, the Draft Report makes no mention of educating end-users with respect to the proper maintenance of an appliance so that they would change a filter in a vacuum cleaner or follow cleaning guidelines on a humidifier. We ask that the Draft Report include this important information.

While one solution might be to install vacuum cleaners with HEPA filters, such a solution would not guarantee that the filter would be maintained properly and replaced with another HEPA filter when necessary. In fact, even if the manufacturer offered only HEPA replacement filters, there are many other filters on the market that the consumer might choose to use instead. The ARB report should not address this issue, unless it provides additional information on the types of filters that exist and the habits of the consumer.

* * * *

In sum, AHAM appreciates the opportunity to comment on this report and would encourage ARB to conduct further studies before recommending such a sweeping regulatory program aimed at residences. AHAM looks forward to working with the Air Resources Board (ARB) on the important issue of IAQ and stands ready to assist in framing the all-important public education programs so necessary to protect the consumer and property. AHAM also is open to partnering in the delivery of these education programs, again, where appropriate.

Sincerely,



David B. Calabrese
Vice President,
Government Relations

cc: Alan Lloyd
Catharine Witherspoon
John Dunlap