

December 28, 2004

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

Dear Ms. Shimer:

RE: Comments on “Indoor Air Pollution in California” a November 2004 Draft Report for public review

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 November 2004 version of the Report to the California Legislature – Indoor Air Pollution in California (the “Draft Report”). AHAM provided comments August 27, 2004 on the initial Draft Report and we are pleased to note that the Air Resources Board (“ARB”) considered and modified certain parts of the Draft Report based on our comments.

However, AHAM still disagrees with Section 6, Prioritization of Sources Based on Exposure and Adverse Impacts. Air cleaners and combustion appliances (i.e. gas ovens, ranges, and stoves) should not be identified on the high priority list and vacuum cleaners should not be identified on the medium priority list.

Additionally, regarding point 16 of the most recent ARB web posting entitled Summary of Public Comments and ARB Responses to the June 2003 Draft Report for AB 1173—Indoor Air Pollution in California (the “Summary Response”), we thank the ARB for mentioning studies from the 1980’s and 1990’s on time spent indoors. This is a critical factor for most of the report and one that seems to be in disagreement. We believe ARB should conduct further research and discuss this issue with stakeholders to make sure that the most current and accurate information is being used.

We appreciate the ARB noting in point 18 of the Summary Response that the recommended mitigation options for improved public education and professional training would address the problem of misuse of outdoor cooking appliances such as grills and hibachis and subtract their contributions to the estimates of CO poisoning. However, the Draft Report still does not clearly reflect this important point.

In addition, the Draft Report still fails to mention that, by definition, the combustion of natural gas creates by-products and therefore, 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. The draft report fails to mention the recent study by the Gas Research Institute which 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.¹

In response to points 19 & 21 of the Summary Response, attached are letters from the staff at the U.S. Consumer Product Safety Commission (CPSC) which resulted from studies conducted at the National Institute of Standards and Technology (NIST). These studies included some misuse conditions of unvented appliances, but clearly state that the current ANSI Z21.1 standards for emission contain sufficient safety margins. CPSC concluded that no changes are necessary at the time to the voluntary safety standards. Furthermore, AHAM still believes that a full survey of the present environment for homes and buildings is necessary in order to develop a baseline data set.

For additional information, we encourage the ARB staff to obtain the guide, "Responding to Residential Carbon Monoxide Incidents" and the "Carbon Monoxide Fact Sheet" #466 available on the US Consumer Product Safety Commission Web Site www.cpsc.gov Library-FOIA/CPSC Publications/Indoor Air Quality.

AHAM objects to most of the proposals in Section 7, Options to Mitigate Indoor Air Pollution. Authorizing state agencies to establish emission limits is not justified, nor is requiring manufacturers to submit product for emissions testing specifically for California. AHAM, our member companies, and various other stakeholders participate in councils and standards development groups, such as ANSI and ASTM, which are designed to ensure that our products, and the standards to which they are designed, do not diminish the quality of indoor air. We strongly encourage ARB staff to become actively involved with the ANSI process.

Furthermore, the Draft Report continues to utilize incorrect data and assumptions, and it also mischaracterizes the indoor air quality ("IAQ") issues associated with home appliance products. For example, it states on page 125 that "To date, there are no industry consensus standards for testing and performance of vacuum cleaners." This is an incorrect statement. ASTM International, originally known as American Society for Testing and Materials, is one of the largest voluntary standards development organizations in the world. One of its technical committees, ASTM Committee F11 for Vacuum Cleaners (established in 1972, current participation at more than 90 members), has 28 vacuum cleaner performance standards under its jurisdiction. These industry consensus standards cover various performance characteristics of vacuum cleaners such as cleanability, durability and reliability, air performance characteristics and filtration efficiency, and are used by floor care manufacturers to evaluate performance.

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

In addition to ensuring that the existing standards are updated on a periodic basis, ASTM F11 committee members undertake **new initiatives** aimed at developing standards for those performance characteristics not yet covered by the current standards. One of these key new initiatives, that is nearing completion, is the development of standards for determining the change in room air particle counts as a result of vacuum cleaning.

The fact that the Draft Report lacks such basic information is further evidence the Air Resources Board should focus its efforts on working with all stakeholders to research and gather current and accurate information on IAQ instead of seeking authority to mandate unnecessary emission standards.

We believe that the ARB should continue to be supportive of educational and outreach programs since those activities will have a direct impact on Californians. The Draft Report states on page 3 that poorly maintained air-conditioners, humidifiers, and dehumidifiers are major indoor sources of pollutants which contribute to adverse health effects and point 22 of the Summary Report states the same. As AHAM mentioned in our previous comments, studies conducted by AHAM, in conjunction with the CPSC, noted that industry recommended cleaning guidelines for humidifiers are effective. All manufacturers include recommended cleaning instructions for these appliances. Consumers must bear some responsibility for maintaining their appliances in a proper manner. AHAM strongly believes that consumer education, regarding the benefits of proper appliance maintenance, would be more effective than added regulation. Education and outreach programs are a low cost, high-impact activity and AHAM would be happy to provide input into such programs and assist with their delivery when appropriate.

AHAM continues to disagree with point 23 of the Summary Report which states that range hoods are not used in homes. This is another area where ARB should seek more current and reliable data on usage patterns before making any recommendations.

In conclusion, AHAM appreciates the opportunity to comment on this Draft Report and strongly encourages ARB to conduct further research and studies before recommending such sweeping regulatory changes. AHAM looks forward to working with ARB to appropriately address any IAQ issues associated with home appliances.

Sincerely,



David B. Calabrese
Vice President
Government Relations

Cc: Alan Lloyd
Catherine Witherspoon
John Dunlap



UNITED STATES
CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, DC 20207

Memorandum

August 24, 2000

TO: Ron Jordan, Project Manager, Fire/Gas Codes and Standards, Directorate for Engineering Sciences,

Through: Mary Ann Danello, Ph.D., Associate Executive Director for Health Sciences (HS) *ma*
Lori E Saltzman, M.S., Division Director, HS *LS*

FROM: Sandra E. Inkster, Ph.D., Pharmacologist, HS *SEI*

SUBJECT: Carbon monoxide (CO) emissions from residential gas ranges: projected consumer exposure and related health concerns.

Introduction

Several groups have suggested that use of unvented gas ranges may expose consumers to carbon monoxide (CO) levels of concern to health. As part of the U.S. Consumer Product Safety Commission's (CPSC) ongoing efforts to address the safety of combustion appliances, staff initiated a project to investigate this issue. Specifically, staff wanted to determine whether these concerns had any basis, and, if so, whether they needed to be addressed by recommendations to the appropriate standards setting authorities. The CPSC's Directorate for Laboratory Sciences (LS) recently issued a report concerning test data on carbon monoxide emissions from different models of residential gas ranges (Davis and Brown, 2000). Based on the CPSC staff's test data, National Institute of Standards and Technology (NIST) staff used a computer model to project indoor air levels of CO resulting from different consumer use patterns of gas ranges (Persily, 2000). Health Sciences (HS) staff was asked to determine whether these CO concentrations have any likely adverse impact on consumer health.

Background

The CPSC LS staff tested eight different models of residential gas ranges. Tests were conducted under different modes of operation which were intended to replicate consumer-use scenarios. Conditions ranged from normal bake or self-cleaning cycles to use as a space heater with partial to full occlusion of the ovens' vent holes by foil lining on the oven floor. CO emission rates were reported for each individual range unit, for up to ten different test conditions (Davis and Brown, 2000).

CPSC contracted with NIST to conduct modelling analyses to project indoor air levels of CO that consumers could be exposed to when using gas ranges, based on CO emission rates derived from CPSC's range test data. For each test on each individual range, CPSC staff provided NIST with the following three measures of CO emission rate: (1) an average emission rate over the entire test period, (2) an average emission rate for the period in which the range had reached steady state operation, and (3) the peak emission rate noted during the entire test period (see Table 2, Persily, 2000 and Appendix 1 in this memorandum). For each operating condition,

that the indoor air levels of CO will likely be increased at these times. CO levels from use of the self clean cycle did not reach the mandatory criteria for CO alarm activation.

Conclusions

When used as intended, unvented gas ranges do not generally produce CO levels of consequence to healthy consumers, even if oven vents are up to 50% occluded. Even when used as a space heater for short durations, or when operated as intended by the manufacturers in small confined spaces, CO levels are not likely to be of health concern unless the oven vents are 100% occluded. Normal use of the self clean cycle is not of concern unless run in a confined space. Staff finds that use of a CO alarm should protect consumers from even the most extreme operating conditions. Staff cannot rule out the possibility that extremely susceptible consumers could be adversely impacted by use of unvented gas ranges in small spaces, but there is generally a low likelihood of adverse health effects associated with CO emissions from properly functioning unvented gas ranges.

References

Davis D, and Brown CJ, CPSC LS memo to Ron Jordan ES. Summary of Carbon Monoxide Emission Test Results of Gas Ranges with Self Cleaning Ovens (4/28/2000)

Persily AK, (NIST) Draft Letter report to CPSC. Estimation of Indoor Carbon Monoxide Levels due to Emissions From Residential Gas Ovens (7/00)

Burton LE, CPSC HS memo. Toxicity from Low Level Human Exposure to Carbon Monoxide (7/1/96)



U.S. CONSUMER PRODUCT SAFETY COMMISSION
WASHINGTON, D.C. 20207

January 10, 2001

Mr. Robert Stack
Standards Engineer
CSA International
8501 East Pleasant Valley Road
Cleveland, OH 44131-5575

Dear Mr. Stack:

The staff of the U.S. Consumer Product Safety Commission (CPSC) reported to the range subcommittee at its May 16, 2000 meeting that it had contracted the National Institute of Standards and Technology (NIST) to perform calculations to project the levels of CO that could likely accumulate in a home based on the results for emissions testing of gas-fired ovens. That work is now complete. In addition, CPSC Health Sciences staff has completed a health assessment based on the results of the NIST calculations. Copies of both reports are enclosed.

I have also enclosed a revised copy of the emissions test report submitted to the subcommittee on May 16, 2000. In typing the final summary tables for the report, some numbers were mistyped. These errors did not affect the conclusions in either the NIST report or the health assessment because those works were done using the data spreadsheets.

Staff requests that these reports be forwarded as information items to the range subcommittee. CPSC staff does not at this time intend to make recommendations based on these reports.

If you have any questions, please contact me at (301) 504-0508, extension 1303.

The positions stated in this letter are those of the Commission staff. They have not been reviewed or accepted by the Commission.

Sincerely,

A handwritten signature in cursive script, appearing to read "Donald W. Switzer".

Donald W. Switzer
Directorate for Engineering Sciences