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Comments submitted via email to ab1173@listserv.arb.ca.gov

Lennox International Inc. appreciates the opportunity to submit comments regarding the Draft Report for Public Review, Report to the California Legislature, Indoor Air Pollution in California dated June 2004. Lennox is a major manufacturer of Heating Ventilating Air Conditioning and Refrigeration (HVACR) equipment, and our Hearth Products Division is headquartered in California.

The information in the report referring to combustion appliances is generally incomplete and confusing, and therefore open to misinterpretation by readers. The report does not clearly denote whether statements and conclusions are referring to site built or factory built fireplaces, wood or gas burning fireplaces and stoves, vented or unvented appliances; draft hood equipped, power vented or direct vented units, whether the appliance (and venting system) is operating normally or abnormally, and where the appliance is located in or out of the conditioned space.

The report totally omits the role of preventative maintenance in maintaining acceptable levels of indoor air quality. Nor does the report educate and guide the reader in understanding the magnitude of the increase in pollutant levels (from normal to abnormal) scientifically proven to have an affect on health. We believe these points must be corrected for the report to be of any value to readers.

In Table ES-1, Particulate Matter refers to "wood stoves and fireplaces" as "major indoor sources". While this implies all wood stoves and fireplaces are major indoor sources, in point of fact it is incorrect. Factory built woodburning stoves and fireplaces that are properly installed result in little or no emissions entering the living space. Models that are sealed combustion systems with integral outdoor air supply contribute no emissions. And it's very unlikely that vented gas fireplaces, regardless of combustion air supply, will emit any particulate matter, either to the venting system (which is not in communication with the living space), or the living space.

In this same table, Carbon Monoxide and Nitrogen Oxide pollutants are attributed to "unvented or malfunctioning gas and propane appliances. . ." or ". . . other combustion appliances. . ." . Unvented gas appliances, other than for cooking are not permitted by California code. Did the author mean to say unvented cooking appliances? In order to

accumulate any appreciable amount of carbon monoxide or nitrous oxide from vented appliances located in the living space, there must be a malfunctioning of the vent system and the combustion air supply or the appliance. The table needs to be corrected.

In section VI, the first paragraph, and the bullet item beginning : "Air cleaning devices. . ." both state that "their effectiveness is limited" with no explanation. In fact, many performance levels of air cleaning devices are available for both particulate matter and VOC removal. In our experience, these devices perform as designed and rated when properly maintained. We would suggest the author justify or qualify the statement, or it should be deleted.

In paragraph two of this bullet, the statement "air cleaning appliances are not effective at removing gaseous pollutants, and typically are not designed to do so." may mislead readers into overlooking commercially available air cleaning devices for use in central HVAC systems (such as photocatalytic oxidation and activated carbon) that do effectively remove gaseous pollutants. We ask that the report be clarified in this section.

Section VII, paragraph four needs to be rewritten in light of our comments in paragraph two above.

Same section, paragraph 5, the last sentence doesn't make sense and should be clarified. Well-documented air cleaner efficiency ratings exist for both portable devices and filters used in central HVAC systems. While a minimum level of filtration efficiency could be specified, it in no way assures all applications will meet a desired (but unspecified) particulate level in the living space.

Table ES-3; The Combustion Appliances and Air Cleaners sections should be corrected in light of the comments contained in paragraphs two three above. Also, mechanical ventilation is a viable strategy and should be added to source reduction in the Potential Mitigation Column entries. Please see nationally recognized ASHRAE standards 62.1 and 62.2 for further information.

Section VIII, items 2 & 3; The report recommends that state standards must be established for emissions testing and labeling of emissions should be required with no mention that gas appliances currently must meet several maximum emission levels requirements (ANSI standards and regional California Air Quality Management District regulations). It also fails to mention that California codes require independent laboratory certification and labeling to be in compliance with these standards. The report needs to be corrected to accurately reflect the benefit of existing requirements, and if additional requirements are recommended, they should be supported by technical justification before being required by the state.

In Section VII, we would suggest that an education campaign explaining the value of periodic maintenance by qualified service personnel be added to the list of recommendations. It should cover building systems and HVAC equipment. Untended water leakage from plumbing or building structure often result in undesirable mold growth. And, after initial

instillation checks, this is a very effective in detecting and correcting malfunctioning appliances and vent systems.

Additionally, bullet 7, Section VII is in error in that unvented combustion appliances (except cook stoves and ovens) are currently prohibited in residences in California

Section IX. The following generalized statements, which are presented as summary of the reports' findings, are not supportable by data contained in this report. "Many agencies, professional groups, and organizations have taken actions to reduce indoor pollution, but these have been piecemeal and are not sufficiently effective in addressing the problem." It would seem the statement reads that no building, residential or commercial, is acceptable which is a conclusion not supported by the data. The conclusion presented should be modified to coincide with the supporting data. Secondly, the statement ". . . woodstoves and fireplaces, and indoor air cleaning devices are high priority sources" is too broad. Please identify the specific objectionable devices, as there is no information presented to support that all indoor air cleaning devices are always high priority sources.

Again, thank you for the opportunity to review this report and comment. If you have questions, or wish to discuss this submission, please do not hesitate to contact me.

Respectfully submitted,



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