



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

August 31, 2000

Mr. Robert Stack
Standards Engineer
Canadian Standards Association
8501 East Pleasant Valley Road
Cleveland, Ohio 44131

~~REMOVED OR NOTIFIED~~
COMMENTS: YES NO
 OVERRULED; ATTACHED
 EXEMPTION/FOIA Ex. _____
Revisions
 DO NOT RE-NOTIFY RE-NOTIFY

Re: Results of the CPSC Staff's Furnace Emissions Testing

9-300 513

Dear Mr. Stack:

In June 1999, the staff of the U.S. Consumer Product Safety Commission (CPSC) began emissions testing of gas-fired central furnaces. This testing was done to obtain a better understanding of furnace performance during normal and compromised vent conditions. The test results support our recommendation to the ANSI Z21.47 Central Furnace Subcommittee (ref: CPSC letters to IAS dated July 22, 1997 and September 14, 1997, titled "Review of Selected Investigation Reports Involving Vent Disconnection from Gas-Fired Central Furnaces") that disconnected vent coverage be added to the furnace standard to reduce the risk of death and injury posed to consumers when the furnace vent pipe becomes disconnected.

A total of five furnaces were tested. As we discussed, the test and analysis reports for one of the furnaces are available now. We expect to provide the test and analysis reports for the remaining four furnaces prior to the September 14th ANSI Z21.47 Central Furnace Subcommittee meeting. Enclosed you will find the following reports for Furnace #1:

- (1) "Furnace Carbon Monoxide Emissions Under Normal and Compromised Vent Conditions" (C. Brown, D. Tucholski, R. Jordan, U.S. CPSC, August 2000)
- (2) "Indoor Air Modeling for a Furnace with Blocked or Disconnected Vents" (W. Porter, U.S. CPSC, September 2000)
- (3) "Carbon monoxide (CO) Emissions from a Residential Draft Hood-Equipped Furnace: Projected Consumer Exposure and Related Health Concerns" (S. Inkster, U.S. CPSC, August 2000)

The results from the second report (Enclosure #2) were used to project consumer exposure and related health effects associated with gas furnaces under the given test conditions (Enclosure #3). Based on these analyses, staff believes that under certain conditions there are CO

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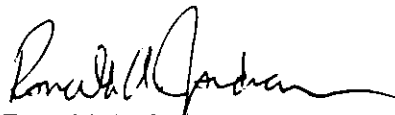
exposure risks associated with furnaces when the vent pipes are either completely disconnected, or completely or partially blocked. To reduce the risk of CO poisoning, the CPSC staff proposes that the following performance requirements be added to the furnace standard:

- (1) Require the furnace to shutoff in the event the vent pipe becomes disconnected (originally proposed in 1997).
- (2) Require the furnace to shutoff in the event the vent pipe becomes totally or partially blocked.

To further support these recommendations, the CPSC staff has updated its review of CO exposure incidents involving furnaces with disconnected vents or blocked vents. This information is being provided for review to the subcommittee under separate cover.

I look forward to attending the September 14th meeting and further discussing our proposals. These recommendations represent the position of the Commission staff. They have not been reviewed or accepted by the Commissioners. If you have any questions please call me at (301) 504-0508, extension 1295.

Sincerely,



Ronald A. Jordan
Project Manager, Fire/Gas Codes &
Standards
Directorate for Engineering Sciences

Enclosures