United States
**Consumer Product Safety Commission**

April 16, 2025

Babak Owlam
CSA Group, Gas Appliances
Project Manager
8501 East Pleasant Valley Road
Cleveland, Ohio, USA, 44131

Dear Mr. Owlam,

CPSC staff appreciates the current efforts of the ANSI/CSA Gas Furnace Technical Sub-Committee's Working Group (WG) to develop requirements for ANSI Z21.47, *Standard for Gas-Fired Central Furnaces,* to reduce the risk of carbon monoxide (CO) poisoning presented by gas furnaces. The weekly meetings demonstrate the WG members' dedication to the detailed work involved in developing requirements to address the risk of CO poisoning.

Staff understands that the WG is focused on requirements that provide a means to ensure shut down of a furnace if CO levels exceed a specified threshold, as measured by CO detection device(s) that monitor CO in the circulating air stream of the furnace. Circulating air means return or supply air, and the intent is for the device to be located within the furnace in the return air compartment or the supply air compartment. Although the WG is not considering CO detection devices that are mounted on the exterior of the furnace, staff understands that the WG is aware of, and will review, the efforts by the Technical Subcommittee for Gas Boilers to evaluate adding a CO interlock device (presumably using a sensor on the exterior of the appliance) requirement to the ANSI Z21 standard for gas boilers.

To support these WG efforts, CPSC staff conducted a review of In-Depth Investigation (IDI) reports which indicated two primary leakage paths that result in CO poisoning once a furnace produces hazardous levels of CO in its exhaust:

1) exhaust vent breach at or near the furnace, and
2) exhaust vent breach at a location remote from the furnace.

In particular, CPSC staff found that approximately 35% of incidents involving furnaces indicated a breach occurred in the exhaust vent that was at or near the furnace. A relatively small number of IDIs (5%) indicated a breach in the vent remote from the furnace, and a significant number of IDIs (57%) did not specify the location of the breach or adequate information to determine where the leak occurred. Staff surmises that this is because first

responders are more likely to investigate the location of the appliance, which is readily accessible, rather than remote, less accessible locations such as walled in chases or attic space through which the vent pipe passes. CPSC will provide the redacted IDIs used for this analysis to the working group via the file transfer app Box at https://cpsc.box.com/s/ipzx2oh9xcepxowyvo1rcfqhljosww7n.

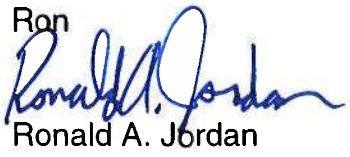
Given the possible leakage paths, CPSC staff encourages the working group to:

1) review the IDIs when they become available,
2) determine if the use of an additional CO sensor on the exterior of the furnace would be necessary and effective to address hazard scenarios revealed in the IDIs, and
3) conduct testing and provide the resulting data as evidence that the performance requirements under development in detecting CO in a home will be effective, regardless of the location (i.e., furnace room or remote) of the leak.

CPSC staff looks forward to continued engagement with you and the WG on steps to eliminate or significantly reduce the risk of CO exposure associated with these products. This letter represents the views of CPSC staff and has not been approved by and may not reflect the views of the Commission.

Sincerely,

Ron



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