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Submitted via: amills@cpsc.gov

July 24, 2024

Ms. Alberta Mills
Secretary
Office of the Secretary
Consumer Product Safety Commission
4330 East West Highway
Bethesda, MD 20814

Re: Notice of Proposed Rulemaking – Safety Standard for Residential Gas Furnaces and Boilers, Docket No. CPSC-2019-0020

Dear Ms. Mills,

The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) submits the following update in response to the Consumer Product Safety Commission’s Notice of Proposed Rulemaking (NOPR) regarding the proposed safety standard for Residential Gas Furnaces and Boilers published in the *Federal Register* on October 25, 2023.

AHRI represents more than 330 manufacturers of heating, ventilation, air-conditioning, and refrigeration (HVACR) and water heating equipment. It is an internationally recognized advocate for the HVACR industry and certifies the performance of many of the products manufactured by its members. In North America, the annual output of the HVACR and water heating industry is more than \$211 billion. In the United States alone, AHRI member companies, along with distributors, contractors, and technicians employ more than 704,000 jobs.

AHRI submitted comments to the proposed rulemaking on January 25, 2024. Since that time, AHRI has submitted a Request for Change (RFC) to the CSA Group’s Gas-fired Central Furnaces Standard Z21.47:21, CSA 2.3:21. AHRI submitted the attached RFC to the CSA Group on July 3, 2024. (Exhibit 1)

Please let me know if you have any questions.

Regards,

A handwritten signature in blue ink that reads "Marie Carpizo".

Marie Carpizo
General Counsel

EXHIBIT 1



Standards Request for Change Form

- Instructions:**
1. Complete all fields.
 2. Type or copy & paste the proposal (specifically worded). Use strikeout for deleted text and underline for new text or use "track changes." Be sure to specify all clause numbers.
 3. Provide the rationale and supporting information and attach additional information, if needed. Proposals without rationales will not be processed.
 4. Send a copy of the completed form to: dragica.jeremicnikolic@csagroup.org

TO BE COMPLETED BY SUBMITTER

Date Submitted	July 3, 2024		
Name	Jerry Yeh	Representing	AHRI
Address	2311 Wilson Blvd, Suite 400, Arlington, VA 22201		
E-mail	jyeh2@ahrinet.org	Phone	703-600-0379

REQUEST FOR CHANGE

Standard Designation (including year/edition)	Z21.47:21, CSA 2.3:21
Standard Title	Gas-fired central furnaces
Reason for proposal (mark as many as apply)	<input checked="" type="checkbox"/> Improve safety <input type="checkbox"/> Immediate safety hazard\ <input type="checkbox"/> Address new technology <input type="checkbox"/> Clarify existing requirements <input type="checkbox"/> Correct an error <input type="checkbox"/> Correlate with other standards (Identify standard:) <input checked="" type="checkbox"/> Other (Explain: Aimed to achieve the same goal for reducing the risk of CO poisoning as identified in the CPSC Notice of Proposed Rulemaking issued Oct. 25, 2023, https://www.regulations.gov/document/CPSC-2019-0020-0022 .)
Criticality assessment	<input checked="" type="checkbox"/> Requires Technical Sub-Committee or Technical Committee review as soon as possible <input type="checkbox"/> Hold for next scheduled meeting of the Technical Sub-Committee
Cross Impact (are other CSA standards impacted?)	The concept of this request could be adapted to other gas appliance standards.

Existing Clause, Table, and/or Figure

(Note: This is a new item for furnaces that does not currently exist.)

4. Construction - Recommend adding a new section described as, "Detection of carbon monoxide into the living space of the dwelling."

Proposed Revision (Please elaborate on a separate page, if necessary.)

(Note: This is a new item for furnaces that does not currently exist.)

Recommend adding a new section to clause 4. Construction.

Recommend new section description as:

4.xx Detection of carbon monoxide migration into the living space of the dwelling

Means must be provided to shut down the furnace operation or modulate a two-stage or step-modulating furnace operation in the event of carbon monoxide levels exceeding UL 2034 standard limits in the living space or any area determined to be communicating with the living space. The furnace must shut down or modulate the burners and maintain airflow until the living space has a CO level below a level of 30 ppm. If the sensor or detection device is not connected, disconnected, or disabled, the gas combustion operation of the furnace shall remain disabled. If a sensor or detection device reaches its expiration date, the furnace shall be allowed to operate in a safe mode, , that diminishes the heating utility so as to alert the homeowner that a service replacement is needed of the sensor or detection device. Fault codes will need to be included in the furnace control for diagnostic purposes.



Recommend adding a new Annex
Recommend new Annex description as:

X.X Carbon Monoxide Detection Systems
X.X1 General
Verbiage TBD
X.X2 Method of test
Verbiage TBD similar to UL 2034 Test

Rationale for Change (The rationale statement shall include: 1) reason(s) for establishing the provisions; 2) the intent of the provision; and 3) as appropriate, other supportive information.)

CPSC has a federal proposed rulemaking that requires control of furnaces to prevent CO in the exhaust of the furnace from exceeding a schedule of levels by duration of operation at that level. For example, the furnace must shut down or modulate if the average level of CO in the exhaust were to be between 150-199 ppm for 60-min. Modulation is provided to allow the furnace to reduce input level if in doing so lowers the level of CO in the exhaust to below 150 ppm. The proposed rule limits the technology selection to only exhaust gas monitoring for CO. CSA held a Working Group most recently in 2016 to 2018 to focus on the feasibility of an exhaust mounted CO sensor and determined that the approach was not feasible due to limitations in affordable sensor technology. During the same Working Group session, CPSC provided redacted IDI data for review and analysis. A standout finding from the IDI data analysis was that functional CO detector/alarms in homes were effective in saving lives. Since the air in the home circulates through the furnace, it therefore perceivable that an air-based sensor design option to allow the furnace to monitor the circulating air for CO and act to shutdown or limit operation based on the monitored level is feasible. Air-based sensors are commonly available and proven to be feasible means through use in CO alarms and detectors. The proposed revision was written so as not to be prescriptive.

This proposal is original material* **Y** **N**

If the proposal is not original material, the source is as follows

Is permission granted for CSA Group to use this information? **Y** **N**

***Note:** Proposed wording and original material is considered to be the submitter's own idea based on, or as a result of, his/her own experience, thought or research, and to the best of his/her knowledge is not copied from another source.

I hereby assign to Canadian Standards Association, operating as "CSA Group" and CSA America Standards Inc., operating as "CSA Group" all worldwide right, title, and interest in and to the proposed change(s) or original material listed above, including, but not limited to, the copyrights thereon and all subsidiary rights, including rights of publication in any and all media, therein.

Signature
(electronic)

FOR INTERNAL USE ONLY

RFC No. TC Number
Date TSC Assigned

Committee Disposition