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90.1 Standing Standards Project Committee

c/o ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.)

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January 27, 2025

Re: Proposed Addendum bk to ANSI/ASHRAE/IES Standard 90.1-2022, Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings (This addendum mandates electric space heating heat pumps as the primary system for all buildings following Section 6.5, “Prescriptive Compliance Path”).

ASHRAE 90.1 Standing Standards Project Committee:

These comments are filed by the American Gas Association (“AGA”) in response to the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (“ASHRAE”) request for public comment on Addendum: BSR/ASHRAE/IES Addendum bk (“Addendum bk”) to ANSI/ASHRAE/IES Standard 90.1-2022, Energy Standard for Sites and Buildings Except Low-Rise Residential Buildings (“ASHRAE 90.1”).

AGA, founded in 1918, represents more than 200 local energy companies that deliver clean natural gas throughout the United States. There are more than 78 million residential, commercial, and industrial natural gas customers in the U.S., of which 95 percent – more than 74 million customers – receive their gas from AGA members. AGA advocates for natural gas utility companies and their customers and provides a broad range of programs and services for member natural gas pipelines, marketers, gatherers, international natural gas companies,

and industry associates. Today, natural gas meets more than one-third of the United States' energy needs.¹

As discussed in more detail below, AGA has grave concerns that Addendum bk contradicts ASHRAE 90.1's stated purpose of energy efficiency, violates the independent and unbiased requirements established for voluntary standard developers, is anticompetitive, and is preempted by federal and state laws.

Appendix A includes Addendum bk. AGA does not support approval of Addendum bk and recommends its disapproval.

ASHRAE 90.1

ASHRAE 90.1 is an *energy code* that belongs to the larger family of *building codes*. Broadly, *building codes* protect public health, safety, and general welfare in the construction and occupancy of buildings. *Building codes*, among other topics, may address structure, parking and traffic, rules to minimize the risk of fire, installation methodologies, and requirements for specific use.² An *energy code* is a type of *building code* that addresses all parts of the building that consume energy or contribute to the consumption of energy.³

The Energy Conservation and Production Act ("ECPA"), which directs the federal Department of Energy and the states to review ASHRAE 90.1, makes clear that the purpose of incorporating the standard into the statute is to provide for "voluntary performance standards for . . . buildings *which are designed to achieve the maximum practicable improvements in energy efficiency*."⁴ ASHRAE 90.1's scope is thus limited, by statute, to promoting "improvements in energy efficiency."

¹ For more information, please visit www.aga.org.

² Congressional Research Service, *Building Codes, Standards, and Regulations: Frequently Asked Questions* (Updated November 22, 2023).

³ Listoken, D, Hattis D, *Building Codes and Housing*, Cityscape: A Journal of Policy Development and Research, Vo. 8, No. 1 (2005) U.S. Dept. of Housing and Urban Development, Office of Policy Development and Research.

⁴ 42 U.S.C. § 6831(b)(2) (emphasis added).

Addendum bk contravenes ECPA by mandating the use of heat pumps as the primary space heating source, thus eliminating the option of using federally approved equipment, such as gas furnaces or the use of a specific source of energy is in conflict with the original purposes of ECPA and ASHRAE 90.1 itself which is intended to be and historically has been fuel neutral.

AGA and its members are fully committed to consumers being able to choose their preferred source of energy and decarbonization through smart innovation, new and modernized infrastructure, and advanced technologies that maintain reliable, resilient and affordable energy service choices for customers. Gas technology and gas infrastructure can help achieve meaningful and immediate progress toward a net-zero emissions future.

ASHRAE Must Follow Due Process Principles Fundamental to Proper Model Consensus Code Development

ASHRAE is an American National Standards Institute (“ANSI”) accredited standard development organization (“SDO”) that develops technical and specialized standards. Under both ANSI requirements and federal guidelines, a voluntary consensus standard or code making body is defined by the following attributes:

- (i) “Openness
- (ii) Balance of interest
- (iii) Due process
- (iv) An appeals process
- (v) Consensus, which is defined as general agreement, but not necessarily unanimity, and includes a process for attempting to resolve objections by interested parties . . .”^{5,6}

⁵ Off. Mgt. Budget, Circular A-119: Federal Participation in the Development and Use of Voluntary Consensus Standards and in Conformity Assessment Activities, 81 Fed. Reg. 4,673 (2016). *Available at* https://www.whitehouse.gov/wp-content/uploads/2020/07/revised_circular_a-119_as_of_1_22.pdf.

⁶ ANSI *Essential Requirements: Due Process Requirements for American National Standards* (January 2024). *Available at*: https://share.ansi.org/Shared%20Documents/About%20ANSI/Current_Versions_Proc_Docs_for_Website/ER_Pro_current.pdf.

These principles are the basic structural requirements for a standard or code to be incorporated into federal law.⁷ They are also essential requirements for an ANSI certified SDO.⁸

In conflict with OMB A-119's and the ANSI Essential Requirements "balance" test, ASHRAE has repeatedly departed from the ANSI SDO tenet that it be an unbiased administrator of code and standard development processes by taking policy positions unrelated to energy efficiency and unilaterally requiring that those policy positions be implemented through ASHRAE's administrator activities:

- "ASHRAE Applauds National Definition of Zero Emissions Building" (June 6, 2024)⁹
- "ASHRAE Press Releases Supporting ASHRAE's Reaffirmed Commitment to GHG Reduction within the Global Build Environment"¹⁰
 - "ASHRAE Expands Commitment to Reduce Greenhouse Gas Emissions by Releasing Building Performance Standards Guide and Redesigned Decarbonization Webpage" (Feb. 3, 2024)
 - "ASHRAE and Building Industry Organizations Assume Leadership Role in Global Decarbonization Efforts" (Nov. 8, 2022)
 - "ASHRAE and the International Code Council to Co-sponsor Whole Life Carbon Approach Standards (Aug. 30, 2022)
 - "2022 Building Performance Analysis Conference to Focus on Better Buildings, Less Carbon" (Jul. 15, 2022)
 - "ASHRAE Commits to Broad Building Decarbonization Initiatives in New Position Document" (July 12, 2022)

⁷ See 42 U.S.C. § 6832(14) (defining "voluntary building energy code," including those developed by ASHRAE, to be those updated "through a consensus process among interested persons").

⁸ *Id.* at FN 6, 7.

⁹ Available at <https://www.ashrae.org/about/news/2024/ashrae-applauds-the-national-definition-of-a-zero-emissions-building>.

¹⁰ Available at <https://www.ashrae.org/about/ashrae-reaffirms-net-zero-energy-goals>.

Each of these press releases demonstrate a clear bias against specific energy sources and a commitment to eliminate the use of natural gas in commercial buildings through ASHRAE 90.1.

ASHRAE is well aware that it is prohibited by law and ANSI procedures from endorsing products and designs. The Public Review Draft states:

The appearance of any technical data or editorial material in this public review document does not constitute endorsement, warranty, or guaranty by ASHRAE of any product, service, process, procedures, or design, and ASHRAE expressly disclaims such.

Yet, Addendum bk expressly does exactly what it disclaims. It eliminates the option to use equipment subject to and approved for use through EPCA as a pathway and endorses an energy source, which is a product offered for sale in both regulated and unregulated markets, by making its use mandatory. It also endorses a technology, heat pumps, by making their use mandatory. These are not objective performance measurements but are compelling the use of certain products over others and thus excluding competitive products.

ASHRAE must not be used as a conduit to affect policy change inconsistent with the energy saving goal of an *energy code* and must avoid becoming or even the appearance of being a biased forum.

The inclusion of Addendum bk is an obstacle to the accomplishment and execution of the original purpose of ASHRAE 90.1, in violation of A-119's principles, ANSI *Essential Requirements*, and the federal statutes by which ASHRAE 90.1 is incorporated into law.

Adhering to Due Process Code Development Principles Helps Avoid Improper Conduct by Market Participants

Codes and standards that fail to follow due process principles during their development result in an unbalanced voting process and lack of deliberation that cannot ensure transparency and openness. This, in turn, results in policy-driven guidance inconsistent with the stated scope and intent of the code or standard. It

Michael L. Murray *General Counsel*

also may result in market restraints and economic burdens on underrepresented market participants and consumers.¹¹

Codes, while only advisory, have a powerful economic influence, many of them being incorporated by reference in federal regulations and state and local laws. Codes, therefore, have immense power to do good but also have the power to frustrate competition in the marketplace.

ASHRAE 90.1 is incorporated into federal law and may be adopted by states and municipalities as legislation. Adoption may also be automatic, e.g., incorporated by reference as amended. All parties are aware that influencing the substance of the code leads directly and predictably to market effects. Therefore, a proper antitrust audit and compliance program is essential.

The effect of mandating a technology and thus excluding sources and technology that are not mandated, but which are federally approved for use through EPCA, is a per se violation of the antitrust laws. The Addendum may not mandate a technology and exclude others.

Without such inclusion, individual builders, utilities, and other stakeholders throughout the United States would make independent, market-driven decisions to determine a building's energy sources.

Promotion of specific fuel types, energy sources, specific technologies that use only one fuel source, or energy pathways within the ASHRAE 90.1 base code or appendices is in conflict with ASHRAE 90.1's energy savings purposes, may be

¹¹ Non-governmental code development forums have a long history of being manipulated in pursuit of anticompetitive gains: *See, Allied Tube & Conduit Corporation v. Indian Head, Inc.*, 486 U.S. 492 (1988) (code committee members' efforts to influence the efforts of a private standard setting organization were determined to be anti-competitive); *American Soc'y of Mechanical Eng'rs, Inc. v. Hydrolevel Corp.*, 456 U.S. 556 (1982) (code development organization committee leadership advanced their economic interests by fraud and anti-competitive activity); *Radiant Burners, Inc. v. Peoples Gas Light and Coke Company*, 364 U.S. 656, (1961) (a standard that limits the marketability of a product in interstate commerce may be anticompetitive if not based on objective standards particularly when those standards are influenced by other market participants).

anticompetitive, and is adverse to federal policy which integrates the ASHRAE 90.1 as an *energy code*, which has the purpose of energy efficiency, into the federal regulatory framework to conserve energy.

Codes and standards-making activities can facilitate commerce and increase efficiency by increasing consumer information but they must be fuel neutral. When they are biased to one energy source those activities also can deprive consumers of the opportunity to make independent market decisions and inflict serious injury on competitors.

Addendum bk is Preempted by Federal and State Law

Inclusion of mandatory electric heat pump provisions ~~in the purpose and scope~~ in ASHRAE 90.1 is not only inconsistent with ASHRAE's responsibilities as an ANSI-accredited SDO and potentially anticompetitive, but also defeats substantive policies at the federal and state level which are indispensable to well-functioning energy markets, lowering greenhouse gas emissions, and addressing climate change.

Addendum bk will discourage the demand for gas appliances and thus the use of natural gas, even if the use of that fuel results in higher energy efficiency or lower greenhouse gas emissions. Such action is barred by the federal Energy Policy Conservation Act and express state legislation ensuring access to natural gas and state utility regulation.

The Code may not do indirectly what it is barred from doing directly. Knowing that direct regulation of appliances or energy sources is prohibited, it may not exclude technologies that use other energy sources.

Addendum bk Will Result in Code Provisions in Violation of the Energy Policy Conservation Act

Promulgating emission reduction code provisions that may eliminate or discourage the use of energy sources is in conflict with the DOE's delegated authority to develop federal "minimum" efficiency standards for products

“covered” by the Energy Policy Conservation Act of 1975 and its amendments (collectively, “EPCA”).¹²

EPCA’s energy efficiency and use regulations apply to “covered products.” EPCA defines “covered products” for consumers as the types of products listed in Section 6292 of the Act.¹³ Section 6292 in turn lists 19 types of defined covered products, including, for example, “water heaters” and “furnaces.”¹⁴ Section 6295 sets out the energy conservation standards for these covered products.

The express preemption in EPCA’s consumer product regulations states that:

effective on the effective date of an energy conservation standard established in or prescribed . . . for any covered product, no State regulation concerning the energy efficiency, energy use, or water use of such covered product shall be effective with respect to such product unless the regulation falls within certain enumerated exceptions.¹⁵

“Energy use” is defined as “the quantity of energy directly consumed by a consumer product at point of use”¹⁶ “Energy” is defined as “electricity, or fossil fuels.”¹⁷

Thus, EPCA’s consumer standards preempt state and local regulations concerning the quantity of electricity or fossil fuels consumed by appliances (including water heaters and furnaces) which are regularly sold to individuals. Similarly, EPCA also governs the energy efficiency and energy use of certain commercial and industrial appliances.¹⁸

“Energy use,” for the purposes of the industrial standards, is defined as “the quantity of energy directly consumed by an article of industrial equipment at the

¹² Energy Policy Conservation Act of 1975 (Pub.L. 94-163, 89 Stat. 871).

¹³ 42 U.S.C. § 6291(2).

¹⁴ *Id.* § 6292(a).

¹⁵ *Id.* § 6297(c).

¹⁶ *Id.* § 6291(4).

¹⁷ *Id.* § 6291(3).

¹⁸ *Id.* § 6311-17.

point of use. . . .”¹⁹ The definition of “energy” refers back to the definition in the consumer standards in Section 6291: energy is “electricity, or fossil fuels.”²⁰

A standard eliminating all building emissions or lowering them so far as to effectively eliminate an energy source is in conflict with EPCA. The U.S. Court of Appeals for the Ninth Circuit has held that building codes cannot, directly or indirectly, prohibit the use of natural gas as energy for covered products.²¹ And the Ninth Circuit may soon not be alone: across the country, gas-restricting building codes are being challenged as violating EPCA.²²

As a result, EPCA preempts any application by states or municipalities of the proposed emission reduction provisions of ASHRAE 90.1 or the proposals which it would permit, because these sections concern the quantity of fossil fuels consumed by EPCA-covered gas space and water heating appliances which are regularly sold for residential, commercial, and industrial use. *At a minimum*, states and municipalities will incur lost resources spent defending adoption of the proposed GHG emissions provisions of ASHRAE 90.1 against a preemption challenge.

Commercial businesses and residential consumers must be able to maintain their right to choose efficient, affordable, and reliable direct use of natural gas as an energy source for their home or business. Mandatory heat pump provisions may prioritize one energy source over another. This places jurisdictions that may adopt the ASHRAE 90.1 in violation of the EPCA.

¹⁹ *Id.* § 6311(4).

²⁰ *Id.* §§6311(7), 6291(3).

²¹ *California Restaurant Ass'n v. City of Berkeley*, 89 F.4th 1094, 1107 (9th Cir. 2024).

²² *E.g., Mulhern Gas Co., Inc. et al. v. Robert J. Rodriguez et al*, No. 1:23-cv-1267 (N.D.N.Y. 2023); *Rivera v. Anderson*, No. 2:24-cv-00677-KKE (W.D. Wa. 2024); *Colo. Apartment Ass'n et al. v. Ryan*, No. 1:24-cv-01093 (D. Colo. 2024); *Restaurant Law Center, et al. v. City and County of Denver*, No. 1:24-cv-01862 (D. Colo. 2024); *Nat'l Ass'n of Home Builders v. District of Columbia*, No. 1:24-cv-02942-ACR (D.D.C. 2024) and *Nat'l Ass'n of Home Builders v. Montgomery County*, No. 8:24-cv-03024-PX (D. Md. 2024).

Addendum bk Will Result in Code Provisions in Violation of State Energy Choice Legislation

Twenty-six states have passed legislation to protect the right of consumers to receive access to natural gas and natural gas utility service.²³ These laws are expressed in variety of ways:

- Ensuring access to utility services,
- Establishing a right to energy access,

²³ [Ala. Act 2021-336](#), H.B. 446, Reg. Sess. (2021); [Ariz. Rev. Stat. Ch. 3](#), H.B. 2686, 54th Leg., 2d Reg. Sess. (2020); [Ark. Act 308](#), S.B. 137, 93rd Gen. Assemb., Reg. Sess. (2021); [Fla. Stat. Ch. 2021-150](#), H.B. 919, 123rd Leg., Reg. Sess. (2021); [Ga. Act 254](#), H.B. 150, 156th Gen. Assemb., Reg. Sess. (2021); [Idaho Sess. Laws ch. 55](#), H.B. 106, 67th Leg., Reg. Sess. (2023); [Ind. Pub. L. No. 180-2021](#), H.E.A. 1191, 122nd Gen. Assemb., 1st Reg. Sess. (2021); [Iowa H.F. 555](#), 89th Gen. Assemb., Reg. Sess. (2021); [Ky. Acts ch. 120](#), H.B. 207, 2021 Reg. Sess.; [Kan. Stat. Ann. ch. 1092](#), S.B. 24, 2021 Reg. Sess.; [La. Act No. 46](#), S.B. 492, 2020 Reg. Sess.; [Miss. Laws Ch. 345](#), H.B. 632, 2021 Reg. Sess.; [Mo. H.B. 488](#), 101st Gen. Assemb., 1st Reg. Sess. (2021); [Mont. Code Ann. § 7-1-111](#), S.B. 208, 68th Leg., Reg. Sess. (2023); [Neb. Leg. L.B. 867](#), 108th Leg., 2d Sess. (2024); [N.H. Laws Ch. 224](#), S.B. 86-FN, 2021 Reg. Sess.; [N.C. Sess. Laws 2023-58](#), H.B. 130, Gen. Assemb., Reg. Sess. (2023); [N.D. Cent. Code Ch. 11-10, H.B. 1234](#), 68th Leg. Assemb., Reg. Sess. (2023); [Ohio Rev. Code Ann. §§ 4933.40-4933.42](#), Sub. H.B. 201, 134th Gen. Assemb., Reg. Sess. (2021); [Okla. Sess. Laws Ch. 309](#), H.B. 3619 (2020); [Pa. S.B. 143](#), 2023-2024 Reg. Sess., Printer's No. 388; [S.D. Codified Laws Ch. 6-1](#), S.B. 174, 98th Leg. Sess. (2023); [Tenn. Pub. Acts Ch. 591](#), H.B. 1838, 111th Gen. Assemb., Reg. Sess. (2020); [Tex. H.B. 17](#), 87th Leg., R.S., ch. 594, § 1, 2021 Tex. Gen. Laws 594; [Utah Laws Ch. 15](#), H.B. 17. (2021); [W. Va. Code Ch. 75](#), H.B. 2842, Reg. Sess. (2021); [Wyo. Sess. Laws ch. 70](#), S.F. 152. (2021).

- Prohibiting discrimination based on energy source, and/or
- Prohibiting limits on the sale, distribution of, or access to natural gas.

States that have passed these energy choice statutes or similar legislation include: Alabama, Arizona, Arkansas, Florida, Georgia, Idaho, Indiana, Iowa, Kentucky, Kansas, Louisiana, Mississippi, Missouri, Montana, Nebraska, New Hampshire, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, South Dakota, Tennessee, Texas, Utah, West Virginia, and Wyoming.

These pieces of legislation would limit, if not eliminate, the ability of these states or municipalities within them to adopt ASHRAE 90.1 with the proposed Addendum. For example, Texas's law, H.B. 17, prohibits "banning, limiting, restricting, [or] discriminating against" types or sources of energy.²⁴ In 2023, in part to avoid conflicts with H.B. 17, 82% of voters in El Paso, Texas rejected a measure that would have set ambitious "renewable energy goals" that aimed to exclude access to certain energy sources and left natural gas and other fuels behind.²⁵ Like those in El Paso, residents and policy makers in the twenty-six states listed above will not be able to reconcile a building code that indirectly restricts natural gas use with a statute that mandates access to that resource.

Moreover, a national consensus code developed under the due process principles noted above cannot be either reasonable or consensus based if it is in conflict with legislation and the express public policy of twenty-six of the fifty states.

Addendum bk would aim to achieve indirectly what these states have explicitly prohibited.

Addendum bk Will Result in Code Provisions in Violation of State Utility Regulation

Most states regulate utilities through a public service commission ("PSC"), which is authorized to administer the regulatory scheme designed by the legislature to

²⁴ Tex. Util. Code § 181.903(b) (effective May 18, 2021).

²⁵ Diego Mendoza-Moyers, EL PASO MATTERS, *El Paso Voters Soundly Reject Proposition K Climate Charter*, May 6, 2023, <https://elpasomatters.org/2023/05/06/proposition-k-election-results-el-paso-climate-charter-may-6/>.

ensure that public utilities provide safe, reliable, non-discriminatory service at reasonable cost. Statutes creating Public Service Commissions set forth a clear legislative policy to place the regulation of public utilities under state control for the public good.

When exercising this authority, the PSC balances the public's needs for access to reliable, efficient and reasonable service (i.e., for gas, electric, water) against the utility's need for sufficient revenue to meet to cost of furnishing service and to earn a reasonable rate of return on their investment to serve the community. The public utility "is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public."²⁶

Utility rates are set forth in tariffs which are approved by the PSC of the state in which the utility is located. The ratemaking process is an inclusive process wherein consumer advocates and the public have an opportunity to participate and comment on how utilities run their systems.

Two goals of the regulatory compact are to ensure that customers have access to reliable and affordable service, and that utilities are able to continue to provide that service at reasonable cost.

On the flip side of the regulatory compact is the right of customers to demand gas service. Put simply, "public utilities . . . are under a state statutory duty to serve the public."²⁷ Gas utilities' duty to serve is mandatory: if customers ask for it, "the [utilities] must comply."²⁸

Inclusion Addendum bk is in conflict with and would thwart the regulatory compact and the utilities' duty to serve. The customers' right to receive service from utilities that provide a gas energy source would be eliminated or diminished by ASHRAE 90.1 proposals mandating electric source energy. This would

²⁶ *Bluefield Waterworks & Imp. Co. v. Pub. Serv. Comm'n of W. Va.*, 262 U.S. 679, 692 (1923).; *see also* *Federal Power Commission v. Hope Natural Gas Co.*, 320 U.S., 591, 603 (1944) (well-established law provides that a utility has the right to recover its reasonable operating expenses and to earn a reasonable rate of return on its invested capital).

²⁷ *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 307 (1989).

²⁸ *Bd. of Pub. Util. Comm'rs v. New York Tel. Co.*, 271 U.S. 23, 31 (1926).

eliminate or reduce the utilities' number of customers. The dwindling number of customers able to receive service would in turn diminish the utility's rate base outside of the PSC rate making process.

Ultimately, if Addendum bk is adopted, states will be left in an impossible situation: update their codes to meet the revised Standard 90.1 and undermine the regulatory compact and the duty to serve *or* uphold the regulatory compact and duty to serve while potentially violating the mandates of ECPA.

ECPA, the regulatory compact, and the duty to serve can exist harmoniously as written. But the proposed Addendum would upset that balance.

Conclusion

AGA respectfully requests that the 90.1 Standing Standards Project Committee consider these comments and implement Addendum bk as recommended in Appendix A to these comments.

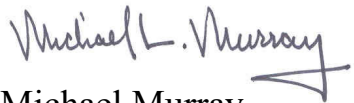
AGA also requests that the ASHRAE respond to these comments in writing and provide a reasoned basis for its determination that the Addendum bk has a direct tie to building energy savings.

Further, AGA requests that the ASHRAE Board immediately implement a written code development procedural system consistent with due process requirements and that help ensure that the process itself does not become suborned by market interested parties seeking to reach improper ends that may be both anticompetitive and in violation of federal and state laws. This would include a robust antitrust compliance program and a conflict of interest disclosure policy for the ASHRAE Board and ASHRAE 90.1 Standing Standard Project Committee members.

AGA is ready to present additional support for these comments upon request.

Dated: January 27, 2025, at Washington, District of Columbia.

Respectfully submitted,

A handwritten signature in blue ink that reads "Michael L. Murray". The signature is written in a cursive style with a prominent loop at the end of the name.

Michael Murray
General Counsel
American Gas Association

Appendix A – AGA Recommends Disapproval of Addendum bk to 90.1-2022:

Add following section:

6.1.4.6 Substantial Alterations to Existing Building HVAC Systems.
Alterations of HVAC equipment that account for not less than 50% of the capacity serving either the heating or cooling loads of a building or alteration area shall comply with Section 6.5.12.

Add the following to Section 6.3.2:

u. The system complies with Section 6.5.12.

6.5.12 Heat pump primary HVAC systems. HVAC systems serving spaces that are both heated and cooled shall comply with Sections 6.5.12.1 through 6.5.12.3.

Exceptions to 6.5.12:

1. Where unitary air conditioners with a rated cooling capacity of not less than 65,000 Btu/h (19 kW) are used in Climate Zones 0A, 0B, 1A, 1B, 2A, 2B and 3C.
2. Chilled water and hot water systems in Climate Zones 0A, 0B, 1A, 1B, 2A, 2B and 3C.

6.5.12.1 Primary space heating. HVAC systems shall comply with Section 6.5.12.1.1 and Section 6.5.12.1.2.

6.5.12.1.1 Electric space heating. HVAC systems using electricity as a heat source shall include electric heat pumps with heating capacity sized in accordance with Table 6.5.12.1.1 based on load calculations in accordance with Section 6.4.2.1.

Exceptions to 6.5.12.1.1:

1. HVAC systems with both thermal energy storage and no heat source other than electric heat pumps, on-site renewable energy, site-recovered energy, or electric resistance or fuel heating allowed by Sections 6.5.12.2.2 through 6.5.12.2.10.
2. HVAC zones in multiple-zone HVAC systems where the airflow rate in heating does not exceed the larger of the following:
 - i. The minimum primary airflow rate required to meet the Simplified Procedure ventilation requirements of ASHRAE Standard 62.1 for the zone, permitted to be the average airflow rate as allowed by ASHRAE Standard 62.1.
 - ii. Any higher rate that can be demonstrated, to the satisfaction of the authority having jurisdiction, to reduce overall system annual energy use by offsetting reheat/recool energy losses through a reduction in outdoor air intake.
 - iii. The airflow rate required to comply with applicable codes or accreditation standards, such as pressure relationships or minimum air change rates.
3. Alterations of cooling systems that do not include fuel-fired heating systems or increased capacity of power distribution systems and where the electric heat pump space heating capacity serving the alteration area is no less than the lesser of the design heat load and design cooling load of the alteration area.

Table 6.5.12.1.1 Electric Heat Pump Minimum Heating Capacity for Primary Space Heating

<u>HVAC System Heating and Cooling Load Conditions</u>	<u>Electric Heat Pump Minimum Heating Capacity</u>
<u>Where the heating system design load is no greater than the cooling system design load:</u>	<u>The heat pump heating capacity under heating design conditions shall be no less than the heating system design load.</u>

<p><u>Where the heating <i>system</i> design load is greater than the cooling <i>system</i> design load, and the heating <i>system</i> load at 47°F (8.3°C) outdoor air temperature is greater than the cooling <i>system</i> design load:</u></p>	<p><u>The heat pump heating capacity determined in accordance with Section 6.5.12.1.1.1 shall be no less than the peak heating <i>system</i> load at 47°F (8.3°C) outdoor air temperature.</u></p>
<p><u>Where the heating <i>system</i> design load is greater than the cooling <i>system</i> design load, and the heating <i>system</i> load at 47°F (8.3°C) outdoor air temperature is no greater than the cooling <i>system</i> design load:</u></p>	<p><u>The heat pump heating capacity determined in accordance with Section 6.5.12.1.1.1 shall be no less than the <i>system</i> cooling design load.</u></p>

6.5.12.1.1.1 Heat pump capacity determination. For air-source heat pumps, compliance shall be demonstrated using the heating capacity at 47°F (8.3°C) outdoor air temperature when tested in accordance with the applicable test procedures in Table 6.8.1-2, Table 6.8.1-4, Table 6.8.1-9, Table 6.8.1-13 or Table 6.8.1-14. For all other heat pumps, compliance shall be demonstrated using the heating capacity under the applicable rating conditions and test procedures in Table 6.8.1-9, Table 6.8.1-13, Table 6.8.1-14, Table 6.8.1-15 or Table 6.8.1-16.

6.5.12.1.2 Fuel space heating. *HVAC systems using fuels as a heat source shall include fuel-fired heat pumps sized to meet the heating *system* design load in accordance with Section 6.4.2.1 and with a minimum *coefficient of performance* no less than the applicable values in Table 6.5.12.1.2 at 17°F (-8.3°C) outdoor air temperature when tested in accordance with CSA/ANSI Z21.40.4.*

Table 6.5.12.1.2.1 Minimum Fuel-Fired Heat Pump Efficiency

<u>Equipment Sizing Category (Input)</u>	<u>Minimum COP at 17°F (-8.3°C) Outdoor Air Temperature</u>
<u><65,000 Btu/h (19 kW)</u>	<u>1.10</u>
<u>≥65,000 Btu/h (19 kW)</u>	<u>1.20</u>

6.5.12.2 Other space heating allowances. *HVAC systems shall be configured to use only systems and equipment meeting the requirements of Section 6.5.12.1, on-site renewable energy or site-recovered energy except as allowed by Sections 6.5.12.2.1 through 6.5.12.2.10.*

6.5.12.2.1 Secondary heat. *Where systems and equipment meeting the requirements of Section 6.5.12.1, on-site renewable energy and site-recovered energy cannot provide the necessary heating energy to satisfy the thermostat setting.*

6.5.12.2.2 Low space heating capacity. *Systems serving buildings or portions of buildings without mechanical cooling and having a total installed heating capacity not greater than 4.0 BTU/h per square foot (12.7 W per square meter) of conditioned space.*

6.5.12.2.3 Small auxiliary heating systems. *Systems that comprise less than 5 percent of the building's total installed heating capacity or that serve less than 5 percent of the building's conditioned floor area.*

6.5.12.2.4 Small buildings. *Systems serving only semiheated spaces of not more than 2500 square feet (23.2 m²) and without mechanical cooling shall be permitted to use electric resistance or fuels for space heating.*

6.5.12.2.5 Freeze protection for low indoor design conditions. Space heating systems sized and configured for freeze protection in spaces with indoor design conditions of not greater than 40°F (4.5°C), including temporary systems in unfinished spaces.

6.5.12.2.6 Freeze protection systems. Freeze protection systems complying with Section 6.4.3.7.

6.5.12.2.7 Pre-heating outdoor air in energy recovery ventilation systems. Systems and equipment that preheat outdoor air for defrost or to temper air entering an energy recovery device, and that comply with one of the following:

1. Where the system recovers latent energy, where the space is mechanically humidified or has a process application that will maintain the space above 30% relative humidity when the outdoor temperature is not greater than 25°F (-4.0°C), and where the outdoor air is preheated to no greater than 25°F (-4.0°C).
2. Sensible-only heat recovery exchangers where the outdoor air is preheated to no greater than 25°F (-4.0°C).
3. Where outdoor air is preheated to no greater than 5°F (-15°C).

6.5.12.2.8 Pre-heating outdoor air in hydronic systems. Hydronic systems without energy recovery ventilation, that do not use freeze protection fluids and where outdoor air is preheated to no greater than 40°F (4.5°C).

6.5.12.2.9 Kitchen make-up air. Where the added heating load of commercial kitchen exhaust system makeup air exceeds the heating capacity of the HVAC system, provided that systems and equipment that do not comply with the requirements of Section

6.5.12.1 are used only to maintain a temperature differential of no more than 10°F (-12°C) between makeup air and the air in the conditioned space.

6.5.12.2.10 Authorized specific conditions. *Systems serving portions of buildings that cannot be served by systems and equipment meeting the requirements of Section 6.5.12.1, as determined and approved by the authority having jurisdiction.*

6.5.12.3 Other HVAC equipment. *All cooling, refrigeration, and ventilation equipment shall use no energy source other than electricity, on-site renewable energy, or site-recovered energy.*

Add the following to Section 13:

<u>Reference</u>		<u>Section</u>
American National Standards Institute (ANSI)		
CSA/ANSI Z21.40.4-23/CSA 2.94-2023	Performance testing and rating of gas-fired air conditioning and heat pump appliances	6.5.12.2.2

*** AGA disapproves of the entire Addendum.**