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VIA EMAIL ONLY

February 23, 2023

Mary Koban
Marie Carpizo
AHRI
2311 Wilson Blvd, Suite 400
Arlington, VA 22201

Re: IAPMO Board of Directors Petition
Standards Council Decision Docket #11-24
UMC Item #208 Public Comment 4

Dear Ms. Koban and Ms. Carpizo,

I am transmitting to you herewith the following decision of the IAPMO Board of Directors.

A duly appointed Board Subcommittee of the IAPMO Board of Directors consisting of Kevin Tindall (Chair), David Gans (Vice Chair), Allen Becker, Rick Garcia, Barry Ramsey, and Jeremy Stettler held a hearing pursuant to the *Regulations Governing Petitions to the Board of Directors from Decisions of the Standards Council*, to consider the petition of AHRI concerning the IAPMO Standards Council decision referenced above. The IAPMO Board accepted the recommendation of the Board Subcommittee in its entirety. Henceforth the announcement and rationale provided by the Subcommittee has been adopted by the Board and is presented by the Subcommittee on behalf and with the authority of the full IAPMO Board of Directors.

Under IAPMO rules, the Standards Council has been delegated the responsibility for the administration of the codes and standards development process, including adjudication of appeals and the issuance of the *Uniform Mechanical Code* (see the *IAPMO Regulations* §§ 1-7, 2-2). On a petition, the Board of Directors must give due deference to the judgment of the IAPMO Standards Council and will not intervene unless the Petitioner demonstrates the existence of extraordinary circumstances requiring intervention to protect the integrity of the codes and standards development process (see the *IAPMO Regulations Governing Petitions* § 3; see also the *IAPMO Regulations* § 1-7).

Petitions to the Board of Directors are not intended to be a full appeal beyond that already afforded by the Standards Council, but rather an opportunity for the Board of Directors to intervene in the event the Board determines there to be extraordinary circumstances.

Procedural Concerns

Petitioner claims the IAPMO Standards Council failed to address and correct procedural issues committed by the IAPMO Technical Committee. The Board disagrees. The record reflects the Technical Committee's decision to accept Public Comment 1 instead of Public Comment 4, as published in the Report on Comments. The Technical Committee's substantiation for rejecting Public Comment 4 referenced their actions taken on Public Comment 1, which was published and accessible within the Report on Comments. Technical justification is not inadequate merely because it is not reprinted under each subsequent comment. There is no procedural violation here.

Petitioner claims "the Standards Council incorrectly noted that 'IAPMO membership twice addressed this item – once at the Assembly Consideration Session in 2021 and again at the Association Technical Meeting in Charlotte in 2022.'" The Board notes there is no misstatement here as the Council is correct in pointing out that Item 208, not the public comment, was addressed at both membership meetings.

Petitioner also claims the Standards Council's adoption of Public Comment 1 instead of Public Comment 4 violated *ANSI's Essential Requirements* to harmonize the *Uniform Mechanical Code* with other American National Standards. The Board disagrees that the adoption of Comment 1 amounted to a violation of ANSI's essential requirement for good faith efforts toward coordination and harmonization. The Council decision took note of the importance of correlating the *UMC* with another ANSI-accredited developer – ASHRAE – in consideration of the most appropriate language to be included in the 2024 *UMC*. The Council decision further notes the close working relationship between IAPMO and ASHRAE. The Board does not find a procedural violation in working towards harmonizing with another standards developer, the Board disagrees as the effort was evident.

Avoiding Conflict

While the Board finds no failure of a good faith effort to harmonize (nor any other failure under IAPMO's Regulations), the Board is seriously concerned that the inclusion of Public Comment 1 will result in reference to outdated code provisions in the *UMC* and conflict with other American National Standards. Petitioner's representative and others testified that Comment 4 is necessary to bring the *UMC* into alignment with the latest versions of *ASHRAE 15* and *UL 60335-2-40*.

They further explained how the language in Public Comment 1 could result in a restriction of products in the marketplace and lead to confusion for Authorities Having Jurisdiction on the enforcement of the 2024 *UMC*. The Board heard testimony and received letters of support addressing the limitations of equipment available in the market, and how the *UMC* should reflect provisions in alignment with the more current American National Standards. If the board were not to act, the 2024 *UMC* would include significantly outdated language regarding Low GWP refrigerant systems, such that it would greatly affect the marketplace, those who install said systems, and consumers.

Though the Technical Committee did not have access to the final, published version of *ASHRAE 15-2022* when they rejected Public Comment 4 (and therefore did not err in their rejection), the Board finds that *ASHRAE 15-2022* is now available and in use. The Board is aware that the Technical Committee was provided published addendums of *ASHRAE 15-2019* throughout the process, and that the 2022 edition was available in November 2022; IAPMO's Technical Committee submitted their final votes on September 30, 2022. Given the unfortunate interaction of the timing of *ASHRAE 15-2022*'s publication with the closure of the Technical Committee's final vote, if the Board did not act in this instance, significant, negative, consequences to the market, consumers, and the environment could result. The Board finds this an exceptional circumstance requiring intervention to ensure the effective operation of the *UMC* within the ecosystem of American National Standards and to avoid significant negative consequences for the industry and consumers. For these reasons, the Board is compelled to act and sees evidence of an extraordinary circumstance.

Decision

The Board grants the petition resulting in the acceptance of Public Comment 4. To this end, the attached language will be included in Chapter 11 of the 2024 *Uniform Mechanical Code*.

Board members Steve Panelli and David Ledda recused themselves from discussion and voting on this petition.

Sincerely,

Kevin Tindall

Kevin Tindall
Chair

Attachment

Cc: IAPMO Code Dept.
Members, Mechanical Technical Committee
IAPMO Standards Council
IAPMO Board of Directors
Jeffrey Jones, Esq.
Rusty Tharp
David Calabrese

Part I – Refrigeration Systems.

1103.0 Classification.

1103.1 Classification of Refrigerants. Refrigerants shall be classified in accordance with Table 1102.3 or in accordance with ASHRAE 34 where approved by the Authority Having Jurisdiction.

1103.1.1 Safety Group. Table 1102.3 classifies refrigerants by toxicity and flammability, and assigns safety groups using combinations of toxicity class and flammability class. For the purposes of this chapter, the refrigerant Groups A1, A2L, A2, A3, B1, B2L, B2, and B3 shall be considered to be individual and distinct safety groups, as shown in Table 1103.1.1. Each refrigerant is assigned into not more than one group.

TABLE 1103.1.1
REFRIGERANT SAFETY GROUP CLASSIFICATIONS

Higher Flammability	A3	B3
Flammable	A2	B2
Lower Flammability	A2L	B2L
No Flame Propagation	A1	B1
	Lower Toxicity	**Lower Toxicity**

1104.0 Requirements for Refrigerant and Refrigeration System Use.

1104.2 Refrigerant Concentration Limit (RCL). The concentration of refrigerant in a complete discharge of an independent circuit of high-probability systems shall not exceed the amounts shown in Table 1102.3, except as provided in Section 1104.3, Section 1104.4, and Section 1104.6. The volume of occupied space shall be determined in accordance with Section 1104.2.1 through Section 1104.2.3.

Exceptions:

(1) Listed equipment in locations other than public corridors and lobbies containing not more than 6.6 pounds (2.99 kg) of refrigerant, regardless of its refrigerant safety classification, provided the equipment is installed in accordance with the listing and with the manufacturer's installation instructions.

(2) Listed equipment for use in laboratories with more than 100 square feet (9.29 m^2) of space per person, regardless of the refrigerant safety classification, provided that the equipment is installed in accordance with the listing and the manufacturer's installation instructions. {ASHRAE 15:7.2}

1104.6 Group A2L Refrigerants for Human Comfort. High-probability systems using Group A2L refrigerants for human comfort applications shall comply with this section. [ASHRAE 15:7.6]

1104.6.1 Refrigerant Concentration Limits. Occupied spaces shall comply with the releasable charge limitations of the equipment listing and ASHRAE 15. Unoccupied spaces with refrigerant containing equipment, not including continuous piping or tubing, shall comply with the releasable charge limitations of the equipment listing or Section 1104.6.4. {ASHRAE 15:7.6.1-7.6.1.2}

1104.6.2 Listing and Installation Requirements. Refrigeration systems shall be listed and shall be installed in accordance with listing, the manufacturer's instructions, and any markings on the equipment restricting the installation. [ASHRAE 15:7.6.2]

1104.6.2.1 Nameplate. The nameplate required by Section 1115.5 shall include a symbol indicating that a flammable refrigerant is used, as specified by the product listing. [ASHRAE 15:7.6.2.1]

1104.6.2.2 Labeling. A label indicating a flammable refrigerant is used shall be placed adjacent to service ports and other locations where service involving components containing refrigerant is performed, as specified by the product listing. [ASHRAE 15:7.6.2.2]

1104.6.2.3 Refrigerant Detection Systems. Refrigerant detection systems shall be in accordance with the listing and ASHRAE 15.

1104.6.2.4 Refrigerant Concentration Above Limit. When the refrigerant detection system senses a refrigerant exceeding its setpoint, the following actions shall be taken:

(1) The supply air fan of the equipment shall activate with a minimum airflow rate specified by the manufacturer.

(2) Turn off the compressor and all other electrical devices, excluding the control power transformers, control systems, and the supply air fan. The supply air fan shall continue to operate for at least five minutes after the

refrigerant detection system has sensed a drop in the refrigerant concentration below the value specified in Section 1104.6.6(b).

Exception: The compressor operation shall not be turned off when the compressor operation reduces the leak rate or the total amount of released refrigerant to the indoor space.

(3) Any device that controls airflow located within the product or in ductwork that supplies air to the occupied space shall be fully open. Any device that controls airflow shall be listed.

(4) Mitigation action required by the equipment listing shall be initiated. {ASHRAE 15:7.6.2.4}

1104.6.3 Ignition Sources Located in Ductwork. Open-flame-producing devices shall not be permanently installed in the ductwork that serves the space. Unclassified electrical devices shall not be located within the ductwork that serves the space. Devices containing hot surfaces exceeding 1290°F (700°C) shall not be located in the ductwork that serves the space unless there is a minimum airflow of 200 ft/min (1.0 m/s) across the heating device(s) and there is proof of airflow before the heating device(s) is energized. [ASHRAE 15:7.6.3-7.6.3.3]

1104.6.4 Mechanical Ventilation. When the releasable charge of the refrigeration system exceeds the refrigerant concentration limit specified in Section 1104.6.1, the refrigerant charge and ventilation air flow shall be in accordance with the equipment listing and ASHRAE 15.

1104.6.5 Compressors and Pressure Vessels Located Indoors. For refrigeration compressors and pressure vessels located in an indoor space that is accessible only during service and maintenance, the refrigerant charge shall be in accordance with the equipment listing and ASHRAE 15 .

1104.6.6 Refrigerant Sensors. Refrigerant sensors required by Section 1104.6.2 shall meet the following requirements:

(1) Refrigerant sensors shall be evaluated by the testing laboratory as part of the equipment listing.

(2) Refrigerant sensors shall be located such that refrigerant will be detected if the refrigerating system is operating or not operating.

(a) For refrigerating systems that are connected to the occupied space through ductwork, refrigerant sensors shall be located within the listed equipment.

(b) For refrigerating systems that are directly connected to the occupied space without ductwork, the refrigerant sensor shall be located in the equipment in accordance with the equipment listing. Additional remote refrigerant sensors shall be permitted within the occupied space when included as part of the equipment mitigation system according to manufacturer's instructions. {ASHRAE 15:7.6.5}

1104.7 Applications for Human Comfort and for Nonindustrial Occupancies. In nonindustrial occupancies, Group A2, A3, B1, B2L, B2, and B3 refrigerants shall not be used in high-probability systems for human comfort. Use of Group A2L refrigerants used in high-probability systems for human comfort shall be in accordance with Section 1104.6.