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(Submitted electronically via pcampbell@aqmd.gov and jvinh@aqmd.gov)

RE: AHRI Comments in Response – South Coast Air Quality Management District (SCAQMD) Proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural-Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural-Gas-Fired Water Heaters (PAR 1121)

Dear Mr. Campbell and Ms. Vinh:

The Air-Conditioning, Heating, and Refrigeration Institute (AHRI) respectfully submits this letter in response to the Proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural-Gas-Fired Furnaces (PAR 1111) and Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural-Gas-Fired Water Heaters (PAR 1121) from South Coast Air Quality Management District (SCAQMD or District).

AHRI represents more than 330 manufacturers of air conditioning, heating, water heating, and refrigeration 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 economic activity resulting from the HVACR 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 people.

AHRI and its members are committed to, and support, greenhouse gas (GHG) emission reductions, while promoting sustainable, safe, reliable, and affordable access to the essential air and water heating and cooling provided by the products they manufacture.

I. General Comments for PAR 1111 and PAR 1121

A. AHRI Member Products Provide Critical Services to California

Space and water heater products¹ include a wide range of manufactured goods, which provide comfort and ensure public health and safety. These space and water heater products serve and support nearly every major sector in California, providing life critical products and services for medical facilities and hospitals; government agencies; the U.S. military; law enforcement, first responders, and public safety; energy; public works and infrastructure support services; critical manufacturing; defense industrial base; and conservation. Often, the health, safety, and the functioning of society depend on these products. Overly burdensome regulations could impair the HVACR and water heating sector's ability to meet these critical needs.

B. AHRI Members Have Greatly Reduced Emissions

AHRI and its members are committed to the overall health of the environment and have a long history of developing products to meet ever-more-challenging aspirational carbon neutrality and emission-reduction goals. Over the past 20 years, the industry has made significant investments toward reducing its emissions and its carbon footprint by creating cleaner technologies and products.

However, on the path to carbon reductions, there are many significant challenges and technological constraints to what can be achieved.

C. Emergency Replacements

In most cases, space and water heating equipment is replaced upon failure of the appliance. If this occurs and the house needs a panel upgrade or other alterations to accommodate a zero-NOx solution, that house could go without space- or water heating for several days, if not weeks, while the retrofits occur. If such an event were to happen during a cold snap, there could be significant concern for the health and safety of the occupant(s). AHRI recommends for the District to continue to consider solutions to the emergency replacement issue, including proactive replacement programs, such that the impact of proposed PAR 1111 and PAR 1121 does not compromise safe and reliable access to services.

The California Statewide Codes and Standards Reach Codes Team (Statewide Reach Code Team) performed a cost effectiveness study for upgrading existing buildings in 2019.² In its report, the team recognized the challenges associated with emergency replacements of space

¹ Space heating products include space heaters, room heaters, ventless room heaters, infra-red heaters, heat pumps, furnaces, boilers, heating elements, burners, boiler equipment and associated parts and accessories, anti-scaling agents, filters, venting, and their associated spare parts, and similar products. These examples are meant to be representative, not exhaustive, of heating products. Water heating products include products which heat water for potable uses; water heating equipment that utilizes gas, oil, or electric (via electric resistance heating elements or a heat pump); storage water heaters; tankless water heaters; and others. Water heater products utilize oil, gas, or electricity to heat potable water for use outside the heater upon demand, and similar products. These examples are meant to be representative, not exhaustive, of water heater products.

² California Statewide Codes and Standards Reach Codes, "2019 Cost-Effectiveness Study: Existing Single Family Residential Building Upgrades" Prepared by: Frontier Energy, Inc. and Misti Bruceri & Associates, LLC. (2019), https://localenergycodes.com/download/826/file_path/fieldList/2019%20Res%20Cost-Eff%20Report-Glendale-2021-03-10.pdf

and water heating when moving from gas to electric, and outlined specific exceptions for these issues:

- Exception 1: Non-ducted space conditioning systems and systems without central air conditioning.
- Exception 2: Ducted space conditioning systems where only the gas furnace is replaced.
- Exception 3: The main service panel does not have the capacity or space to accommodate an additional 240V, 30 A circuit, and the cost to upgrade the main service panel and run required electrical service to the heat pump air handler is prohibitive as determined by the jurisdiction.

For heat pump water heaters, the Statewide Reach Code Team identified the need for the following exceptions:

- Exception 1: The proposed location of the new water heater is located within conditioned space.
- Exception 2: The proposed location of the replacement water heater is not large enough to accommodate a heat pump water heater (HPWH) equivalent in size and one-hour capacity rating to the existing water heater or the next nominal size available.
- Exception 3: The main service panel does not have the capacity or space to accommodate an additional 240 V, 30 A circuit, or the cost to upgrade the main service panel and run required electrical service to the water heater is prohibitive as determined by the jurisdiction.
- Exception 4: A solar water heating system is installed meeting the installation criteria specified in Reference Residential Appendix RA4.20 and with a minimum solar savings fraction of 60 percent.

AHRI recommends for the District to consider and address these exceptions in the continued development of PAR 1111 and PAR 1121.

II. Comments specific to Proposed Amended Rule 1111 – Reduction of NOx Emissions from Natural-Gas-Fired Furnaces (PAR 1111):

A. Dual-Fuel Systems

AHRI requests that the District reconsider its exclusion of dual-fuel systems as a compliance pathway for the ultra-low NOx requirements in PAR 1111. Dual-fuel systems provide an ideal pathway to lower NOx emissions and reach the average NOx emissions of less than 14ng/j required in the section. Not only would a dual-fuel pathway limit NOx emissions but it also would help homeowners move to heat pumps sooner, at a reasonable cost, and provide increased resiliency to the grid by reducing winter peak loads.

SCAQMD should include a definition of dual-fuel systems in the proposed rule with control requirements to ensure the weighted average NOx emissions are below the requirements. Dual-fuel systems also should be considered as an option in the environmental analysis, especially given the impact to low- and medium-income consumers.

B. Product Labeling

AHRI members do not support the requirement for a label on furnaces to enforce PAR 1111.

Manufacturers do not have a way to know where the equipment will ultimately be installed, as our members work through distributors and wholesalers, labeling specific to a state air district is impractical and overly burdensome. SCAQMD maintains a database³ of equipment with NOx levels and an inspection agency therefore could look up equipment compliance.

C. Alternate Compliance – Rental Furnaces

AHRI members are concerned with the suggested alternate compliance options related to rental furnaces. The emergency replacement exemption for furnaces involves the temporary installation of ultra-low NOx furnaces for a very short period of time until electrical upgrades can be completed. This amounts to an unreasonable amount of labor and upgrade charges to the consumer.

AHRI believes a short-term rental furnace option will be costly for homeowners and contractors: requiring that almost twice the work be completed for one furnace replacement. If the District believes rental equipment will enable this option for alternate compliance, then AHRI recommends the District develop, administer and fund a program, as opposed to relying on the market to create such an offering.

III. Comments specific to Proposed Amended Rule 1121 – Reduction of NOx Emissions from Small Natural-Gas-Fired Water Heaters (PAR 1121):

A. Residential Applications

As referenced in the Preliminary Staff Report⁴, the New Buildings Institute (NBI) worked closely with 120V HPWH manufacturers and utilities in California on a statewide 120-volt HPWH field validation program from 2021 to 2023⁵. AHRI reminds the District that notwithstanding 120V HPWHs ability to be “plugged in” to a standard 120V outlet, many utility closets, basements, and garages do not currently have a 120V outlet located by the water heater. This means that even when these products are readily available, an electrician would be required to install a dedicated outlet for the water heater. Further HPWHs require condensate removal. If a drain does not exist near the water heater, a plumber would be required to install one. These are just a few of the technical barriers and costs that need to be considered for the wide-scale adoption of these products, which are not accounted for in the Preliminary Staff Report’s analysis.

A rushed technology transition may lead to unintended consequences with respect to installation and performance of the products, which would only serve to damage public perception and slow the adoption in other jurisdictions. Given the status of this market, the 2027 transition date for existing construction is unreasonable. A reasonable timeframe must be established for these products to be developed and matured, such that the supply chain can handle this regulation and contractors and technicians have time to be trained in proper installation and maintenance.

³ <http://www.aqmd.gov/home/programs/business/business-detail?title=certified-equipment>

⁴ <https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/1111-and-1121/par-1111-and-1121-preliminary-draft-staff-report.pdf>

⁵ https://newbuildings.org/wp-content/uploads/2023/07/PlugInHeatPumpWaterHeaterFieldStudyFindingsAndMarketCommercializationRecommendations_NBI202308.pdf

B. Product Labeling

AHRI members do not support the requirement for a label on water heaters to enforce PAR 1121. SCAQMD maintains a database⁶ of equipment with NOx levels and an inspection agency therefore could look up equipment compliance.

If the District continues to use labels as an enforcement mechanism, AHRI suggests the label language in PAR 1121 be consistent with the language adopted in Rule 1146.2, “For use in existing buildings only.”

The label wording in PAR 1121 (g)(1) – *Labeling Water Heaters for Installation and Use in Existing Buildings* implies that any water heater is suitable for use in mobile homes:

“If Installed in South Coast AQMD: 1) After January 1, 2026, shall not be sold for installation in new buildings; 2) After January 1, 2027, only for installation in mobile homes; and 3) After January 1, 2030, not compliant for use and installation in South Coast AQMD.”

However, because of specific space constraints and plumbing requirements, not all water heaters are suitable for use in mobile homes. This wording could be misinterpreted by stakeholders that any water heater with this label is suitable for use in a mobile home setting.

C. Alternate Compliance – Rental Water Heaters

AHRI members are concerned with the suggested alternate compliance options related to rental water heaters. Generally, warranties apply to water heaters installed in a specific dwelling and it is transferable between owners, but not between locations. Any contractor intending to use a water heater as a short-term rental for different locations could void the warranty.

AHRI believes a short-term rental water heater option will be costly for homeowners and contractors: requiring that almost twice the work be completed for one water heater replacement. If the District believes rental equipment will enable this option, then AHRI recommends for the District to develop, administer and fund a program, as opposed to relying on the market to create such an offering.

AHRI questions how a rental water heater option would permit contractors who rent water heaters to purchase equipment for rental purposes from manufacturers, when manufacturers are making every effort not to ship non-compliant product into the district.

D. Annual Reporting Requirements

AHRI members emphasize that the data that District staff is requiring to be provided under paragraph (g)(4)(E) is proprietary information of product manufacturers. It is unclear as to why the District believes this information is necessary to fulfill its enforcement obligations related to this rule. AHRI strongly urges District staff to add language to paragraph (g)(4)(E) of PAR 1121 clarifying that the District will treat such data as Confidential Business Information and will not be shared by the District with third parties. Such language would also provide assurances to manufacturers that they are not being compelled to directly or indirectly disclose confidential

⁶ <http://www.aqmd.gov/home/programs/business/business-detail?title=certified-equipment>

information, specific to their organization, to which other parties would not otherwise have access.

IV. Conclusion

Two fundamental pillars of industry are certainty and consistency. The proposals in these comments address certainty for industry. Consistency can only be achieved by local air quality management districts working to align on NOx requirements so that there is one clear, consistent path forward for manufacturers in California. Incentives should be provided for early adoption, and programs should be put in place to help low-income households afford this transition. This approach will aid in an equitable transition and remove the main hurdle for emergency replacements, which is cost. This approach will also allow for optimal environmental benefits.

AHRI appreciates the opportunity to submit these comments and welcomes the opportunity for further discussion. If you have any questions regarding this submission, please do not hesitate to contact me.

Sincerely,

A handwritten signature in black ink that reads "Nicole Colantonio". The signature is written in a cursive, flowing style.

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