September 27, 2019

Washington State Building Code Council
1500 Jefferson Avenue SE
Post Office Box 41449
Olympia, Washington 98504-1449

Re: Update of UL/ANCE/CAN 60335-2-40 to Allow Flammable Refrigerants in Residential Applications

Members of the Council:

My name is Chris Forth and I am here representing Johnson Controls who is a leading global provider of heating, ventilating and air conditioning equipment, building controls, security and fire/life safety solutions.

I have worked in the industry for ~ 29 years in various capacities including designing, testing and specifying residential and commercial equipment and controls. I currently manage all the regulatory, codes and standards for Johnson Controls Ducted Systems.

Positon Statement and Request

JCI is opposed to the proposed update to the Washington State Building Code that would reference the 2019 version of product safety standard (UL/ANCE/CAN 60335-2-40) that would inadvertently allow the use of flammable refrigerants in residential air conditioning systems.

Safety First

As an original equipment manufacturer who designs, test, manufacturers and services residential and commercial air-conditioning equipment, it is critical that all necessary research and testing be completed prior to any safety or performance standards being published. In this case there remain at least five critical research projects that have yet to be completed. The results of those five test need to be incorporated into the so called "finished" UL and ASHRAE standards prior to beginning any design work.

Current Air-Conditioning, Heating and Refrigeration Technology Institute (AHRTI) projects.

> 9012: Refrigerant Leak Characterization: Evaluates the impact of A2L refrigerant leaks on concentrations in the spaces to which they are connected.
>
> 9014: Assess Refrigeration Detector Characteristics for Use in HVACR Equipment: Several sensors have been selected for evaluation and a test plan is being developed.
>
> 9015, Assessment of Refrigerant Leakage Mitigation Effectiveness for Air Conditioning and Refrigeration Equipment: This will test the proposed controls mitigation strategies contained within the UL and ASHRAE safety standards.

Current ASHRAE projects.

> RP-1806: Post-Ignition Risk Assessment. Simulation of combustion test models with A2L refrigerants.
>
> WS-1855: Evaluation of Combustion By-Products for HFO Refrigerants.

One of the most critical of those five projects is the controls mitigation scheme testing AHRTI 9015 (how the equipment reacts when a leak of flammable refrigerants is detected) which has yet to be formally tested.

The existing UL and ASHRAE safety standards are also not complete in JCI's opinion as they have numerous open issues remaining to be resolved and have overlapping, conflicting requirements. For example ASHRAE standard 15.2 which specifically covers residential applications (and is just beginning the standards development process) has requirements for unique, left handed threads which the corresponding UL standard does not. This is but one example of the multiple conflicts between the two standards that needs to be resolved before any transition to flammable refrigerants in residential applications should be allowed.

Conclusion

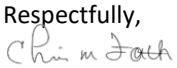
Given the above issues and the lack of training available for residential contractors on the safe use and handling of flammable refrigerants who OEM's such as JCI ultimately rely on for the safe installation and service of these new flammable refrigerant units, JCI is opposed to the update of UL/ANCE/CAN 60335-2-40 to the 2019 edition that would allow flammable refrigerants in residential applications.

Thank you.

About Johnson Controls

Johnson Controls is a leading global provider of heating, ventilating and air conditioning equipment, building controls, security and fire/life safety solutions with ~105,000 employees and ~2,000 locations across six continents. Since Johnson Controls first set sustainability goals in 2002, the company has reduced the greenhouse gas emissions from our global operations by 51%. While we enthusiastically support efforts to phase down HFCs as an important component of our climate strategy, we have significant safety and economic impact concerns with the accelerated phase-out dates and practices being proposed.

Respectfully,



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