1323.0643 SECTION 6.4.3, CONTROLS.

Subpart 1. **Setback controls.** ASHRAE Standard 90.1, Section 6.4.3.2, is amended by adding a subsection to read:

> **6.4.3.2.1 Setback controls.** Heating systems shall be equipped with controls that have the capacity to automatically restart and temporarily operate the system as required to maintain zone temperatures above a heating set point adjustable down to 55 degrees Fahrenheit or lower. Cooling systems shall be equipped with controls that have the capacity to automatically restart and temporarily operate the system as required to maintain zone temperatures below a cooling set point adjustable up to 90 degrees Fahrenheit or higher or to prevent high space humidity levels.
>
> **Exceptions:**
>
> (a) Radiant floor and radiant ceiling heating systems; and
>
> (b) Spaces where constant temperature conditions must be maintained.

Subp. 2. **Optimum start controls.** ASHRAE Standard 90.1, Section 6.4.3.3.3, is amended to read:

> **6.4.3.3.3 Optimum start controls.** Individual heating and cooling air distribution systems with a total design supply air capacity exceeding 10,000 cfm, served by one or more supply fans that are connected together into a common system, shall have optimum start controls. The control algorithm shall, as a minimum, be a function of the difference between space temperature and occupied setpoint and the amount of time prior to scheduled occupancy.

Subp. 3. **Zone isolation.** ASHRAE Standard 90.1, Section 6.4.3.3.4, is amended to read:

> **6.4.3.3.4 Zone isolation.** HVAC systems serving zones that are intended to operate or be occupied nonsimultaneously shall be divided into isolation areas. Zones may be grouped into a single isolation area provided it does not exceed 25,000 feet^2 of conditioned floor area nor include more than one floor. Each isolation area shall be equipped with isolation devices capable of automatically shutting off the supply of conditioned air and outside air to and exhaust from the area. Each isolation area shall be controlled independently by a device meeting the requirements of Sections 6.4.3.3.1 (Automatic shutdown) and 6.4.3.3.2 (Setback controls). For central systems and plants, controls and devices shall be provided to allow stable system and equipment operation for

any length of time while serving only the smallest isolation area served by the system or plant.

Subp. 4. **Freeze protection and snow/ice melting systems.** ASHRAE Standard 90.1, Section 6.4.3.8, is amended to read:

6.4.3.8 Freeze protection and snow/ice melting systems. Freeze protection systems, such as heat tracing of outdoor piping and heat exchangers, including self-regulating heat tracing, shall include automatic controls capable of shutting off the systems when outdoor air temperatures are above 40 degrees Fahrenheit or when the conditions of the protected fluid will prevent freezing. Snow and ice melting systems shall include automatic controls capable of shutting off the systems when the pavement temperature is above 50 degrees Fahrenheit and no precipitation is falling and an automatic or manual control that will allow shutoff when the outdoor temperature is above 40 degrees Fahrenheit so that the potential for snow or ice accumulation is negligible.

Subp. 5. **Ventilation controls for high-occupancy areas.** ASHRAE Standard 90.1, Section 6.4.3.9, is amended to read:

6.4.3.9 Ventilation controls for high-occupancy areas. Demand control ventilation (DCV) is required for spaces larger than 500 feet^2 (46.45 m^2) and with a design occupancy for ventilation of greater than 40 people per 1,000 feet^2 (92.90 m^2) of floor area and served by systems with one or more of the following:

(a) an air-side economizer;

(b) automatic modulating control of the outdoor air damper; or

(c) a design outdoor air flow greater than 300 cfm (141.58 L/s).

Exceptions:

(a) Systems with energy recovery complying with 6.5.6.1.

(b) Multiple-zone systems without direct-digital control of individual zones communicating with a central control panel.

(c) System with a design outdoor air flow less than 1,200 cfm (566.34 L/s).

(d) Spaces where the supply air flow rate minus any makeup or outgoing transfer air requirement is less than 1,200 cfm (566.34 L/s).

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