

**Editorial
modifications
to Item
VII.D.**

State of Oregon

Board memo

Building Codes Division

February 3, 2010

To: Building Codes Structures Board

From: Richard Rogers
Structural Program Chief

Subject: 2010 Oregon Energy Efficiency Specialty Code (OEESC) editorial changes

Action requested:

Approve the outlined editorial changes to the 2010 OEESC when approving the full code.

Discussion:

During the final review of the 2010 OEESC, some editorial inconsistencies and errors were found within the document. The changes identified below correct these issues.

PROPOSED OREGON AMENDMENTS TO THE 2010 OEESC:

Section 202:

DEMISING ELEMENT. A Building element consisting of walls, windows, doors, floors or ceilings that separates conditioned space from ~~either unconditioned or semi-conditioned~~ space(s).

Section 502.1.1:

502.1.1 Insulation and fenestration criteria. The *building thermal envelope* shall meet the requirements of Tables 502.2(1) and 502.3 based on the climate *zone* specified in Chapter 3. Commercial buildings or portions of commercial buildings enclosing Group R occupancies shall use the *R*-values from the “Group R” column of Table 502.2(1). Commercial buildings or portions of commercial buildings enclosing occupancies other than Group R shall use the *R*-values from the “All other” column of Table 502.2(1). Buildings with a vertical fenestration area or skylight area that exceeds that allowed in Table 502.3 shall comply with Section 502.1.3, Simplified trade-off approach or Section 506.1, Modeling Whole Building Approach.

Section 503.2.4.1:

503.2.4.1 Thermostatic controls. The supply of heating and cooling energy to each zone shall be controlled by individual thermostatic controls ~~capable of responding~~ **that respond** to temperature within the zone.

Section 503.2.4.7:

503.2.4.7 Zone isolation controls. A system serving multiple occupancies or floors in the same building shall be independently zoned and equipped with isolation devices capable of automatically shutting off the supply of conditioned air and outside air to and from each isolated area. Each isolated area shall be controlled independently and satisfy temperature setback (Section ~~4317.4.2~~ **503.2.4.4.1**) and optimum start control (**503.2.4.3**) requirements. The central fan system air volume shall be reduced through fan speed reduction.

Exception: A cooling system less than 240,000 Btu/hr (70 kW) or a heating system with less than 300,000 Btu/hr (88 kW) total capacity.

Section 503.4.3.4:

503.4.3.4 Part load controls. Hydronic systems greater than or equal to 300,000 Btu/h (87,930W) in design output capacity supplying heated or chilled water to comfort conditioning systems shall include controls that:

1. Automatically reset the supply-water temperatures using zone-return water temperature, building-return water temperature, or outside air temperature as an indicator of building heating or cooling demand. The temperature shall be capable of being reset by at least 25 percent of the design supply-to-return water temperature difference; or
2. For pumping systems ~~greater~~ less than 5hp reduce system pump flow by at least 50 percent of design flow rate utilizing adjustable speed drive(s) on pump(s), or multiple-staged pumps where at least one-half of the total pump horsepower is capable of being automatically turned off and control valves designed to modulate or step down, and close, as a function of load, or other *approved* means.
3. For pumping systems greater than 5hp reduce system pump flow by at least 50 percent of design flow rate utilizing adjustable speed drive(s) on pump(s) and control valves designed to modulate or step down, and close, as a function of load, or other *approved* means.

Exception: ~~4.~~ Dedicated equipment circulation pumps designed to meet minimum flow requirements established by the manufacturer, such as boiler or chiller auxiliary circulation pumps.

Section 503.4.5.4:

503.4.5.4 Heat recovery for reheat and service water heating. Where the total installed heat rejection capacity of water-cooled chillers exceeds 6,000,000 Btu/hr and the combined

design reheat, dual duct heating, and service water heating load exceeds 1,000,000 Btu/hr, all the following shall apply:

1. Condenser heat recovery shall be installed for heating or preheating of service hot water, heating water for reheat, or dual-duct system heating.
2. Reheat coils and dual duct heating coils shall be hydronic; except VAV zones with design airflow less than 500 cfm may have electric reheat.
3. ~~Water-cooled heat recovery chiller(s) or water-cooled package cooling units shall be prioritized to serve loads not subject to economizer operation.~~
4. The required heat recovery system shall have the capacity to provide the smaller of:
 - 4.1 Thirty percent of the peak heat rejection load at design conditions; or
 - 4.2 The preheating required to raise the peak service hot water draw to 85°F (29°C) plus ten percent of the design reheat or dual-duct heating load.

Section 504.7.4:

504.7.4 Heat Recovery. Heated indoor swimming pools, Spas, or Hot tubs with water surface area greater than 200 square feet shall provide for energy conservation by an exhaust air heat recovery system that heats ventilation air, pool water, or domestic hot water. The heat recovery system shall be capable of decreasing the exhaust air temperature at design heating conditions by 28°F (15.5°C).

Exception: Pools, spas, or Hot tubs that include system(s) that provide equivalent recovered energy on an annual basis through one of the following methods:

(1) heated by renewable energy.

(2) dehumidification heat recovery, **when the evaporative coil is located upstream of the exhaust air stream.**

(3) waste heat recovery, or

(4) a combination of these system(s) sources capable of providing at least 70 percent of the heating energy required over an operating season.

Section 505.2.4:

505.2.4 Exterior lighting controls. Lighting not designated for dusk-to-dawn operation shall be controlled by either a combination of a photosensor and a time switch, or an astronomical time switch. Lighting designated for dusk-to-dawn operation shall be controlled by an astronomical time switch or photosensor. All time switches shall be capable of retaining **retain** programming and the time setting during loss of power for a period of at least 10 hours. Lighting designated to operate more than 2000 hours per year for Uncovered Parking Areas shall be equipped with motion sensors that will reduce the luminaire power by thirty-three percent or turn off one-third the luminaires when no activity is detected.