

**Issue:** #TB166  
**Date:** January 1, 2006  
**Topic:** ASHRAE/IESNA Standard 90.1-2001/2004

## Update on ASHRAE 90.1 Requirements: 2001 and 2004 Changes

The ASHRAE/IESNA Standard 90.1 states minimum energy efficiency requirements for commercial building design. The standard is maintained on a continual maintenance program, which means that its provisions are updated according to an established cycle. During this cycle, various provisions may be revised, new requirements may be added, and existing provisions removed.

Since 2002, when the Department of Energy (DOE) selected ANSI/ASHRAE/IESNA Standard 90.1-1999 as the commercial building reference standard for state building energy codes, ASHRAE 90.1 has undergone 2 revisions: in 2001 and 2004. While neither of these revisions has yet been adopted by DOE as a national standard, one will certainly be adopted. Furthermore, numerous states have adopted the continual maintenance approach when they adopted ASHRAE, which means that when the standard updates, all state codes using it do too.

The principal lighting control provisions of ASHRAE 90.1 remain the same:

- Automatic shutoff
- Space Controls
- Exterior lighting controls
- Additional controls for specialized lighting or applications

This bulletin focuses on the changes in ASHRAE 90.1-2001 and 2004 as compared to ASHRAE 90.1-1999. Refer to #TB156 for a complete summary of 90.1-1999.

### Automatic Lighting Shutoff:

| ASHRAE Provision: Auto-OFF  | 90.1-1999 | 90.1-2001 | 90.1-2004 |
|---|-----------|-----------|-----------|
| Scheduling  |           |           |           |
| - indep. schedules < 25,000 ft. <sup>2</sup>  | X         | X         | X         |
| - not more than 1 floor   | X         | X         | X         |
| Occupancy sensors   | X         | X         | X         |
| - max. 30-minute time delay   |           |           |           |
| Occupant intervention   | X         |           |           |
| By another building signal indicating that the area is unoccupied.                          |           | X         | X         |
| Exclusions:   |           |           |           |
| - lighting required for 24 hour operations  | X         | X         | X         |
| - patient care areas/spaces   |           |           | X         |
| - where automatic shutoff would endanger safety or security of room or building occupant(s) |           |           | X         |

**Space Control:**

| <b>ASHRAE Provision: Space Controls</b>  | 90.1-1999 | 90.1-2001 | 90.1-2004            |
|--|-----------|-----------|----------------------|
| At least 1 switch or sensor to independently control lighting  | X         | X         | X                    |
| Devices accessible and located so occupant can see controlled lighting   | X         | X         | X                    |
| Control zone sizes: <ul style="list-style-type: none"> <li>• 2500 ft<sup>2</sup> max for up to 10,000 ft<sup>2</sup></li> <li>• 10,000 ft<sup>2</sup> &gt; 10,000 ft<sup>2</sup></li> </ul>  | X<br>X    | X<br>X    | X<br>X               |
| Override device (i.e., switch, PC-activated, or sensor) where override period does not exceed 4 hrs.   | X         | X         | X                    |
| Specific spaces must have control device to automatically turn lighting off within 30 minutes after last occupant leaves <sup>1,2</sup> <ul style="list-style-type: none"> <li>• Classrooms<sup>2</sup></li> <li>• Conference /meeting rooms</li> <li>• Employee lunch/break rooms</li> </ul> Exceptions: <ul style="list-style-type: none"> <li><sup>1</sup>- if multi-scene control is used</li> <li><sup>2</sup>- shops, labs, PreK-12 class rooms</li> </ul> |           |           | X<br><br>X<br>X<br>X |

**Exterior Lighting Control:**

| <b>ASHRAE Provision: Exterior Lighting Controls</b>   | 90.1-1999 | 90.1-2001 | 90.1-2004 |
|---|-----------|-----------|-----------|
| Controlled by photosensor or astronomical time switch <ul style="list-style-type: none"> <li>• 10-hour memory retention in event of power loss</li> </ul> | X         | X         | X<br>X    |

**Additional Control Requirements**

The provisions in ASHRAE 90.1-2001/2004 related to additional controls have not changed from the 1999 provisions.