Addendum v to
ASHRAE Guideline 36-2021

Public Review Draft

Proposed Addendum v to Guideline 36-2021, High-Performance Sequences of Operation for HVAC Systems

First Public Review (November 2023)
(Draft shows Proposed Changes to Current Guideline)

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FOREWORD

This addendum provides a way to establish different demand limit adjustments to different space types. This is particularly useful when there are critical zones where setpoints should not be adjusted.

Note: In this addendum, changes to the current guideline are indicated in the text by underlining (for additions) and strikethrough (for deletions) unless the instructions specifically mention some other means of indicating the changes. Only these changes are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed substantive changes.
Addendum v to Guideline 36-2021

(IP and SI Units)

1. PURPOSE

The purpose of this guideline is to provide uniform sequences of operation for heating, ventilating, and air-conditioning systems. The sequences described herein are intended to improve energy efficiency and performance, provide control stability, and allow for real-time fault detection and diagnostics.

2. SCOPE

2.1 This guideline provides detailed sequences of operation for HVAC systems.

2.2 This guideline describes functional tests that, when performed, will confirm implementation of the sequences of operation.

3. SETPOINTS, DESIGN AND FIELD DETERMINED

3.1 Information Provided by Designer

3.1.1 General Zone Information

Revise Section 3.1.1.1 as follows:

3.1.1.1 Zone Temperature Setpoints

Zone temperature initial setpoints can be specified by the designer in a number of ways. The most flexible way is to include them for each zone in variable-air-volume (VAV) box and single-zone VAV (SZVAV) air-handling unit (AHU) equipment schedules. They can also be generically listed by zone type, such as the example in (a) and (b) below.

a. Default setpoints shall be based on zone type as shown in Table 3.1.1.1-1.

Table 3.1.1.1-1 Default Setpoints

<table>
<thead>
<tr>
<th>Zone Type</th>
<th>Occupied Heating</th>
<th>Coolin</th>
<th>Unoccupied Heating</th>
<th>Coolin</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAV</td>
<td>21°C (70°F)</td>
<td>24°C (75°F)</td>
<td>16°C (60°F)</td>
<td>32°C (90°F)</td>
</tr>
<tr>
<td>Mechanical/electrical rooms</td>
<td>18°C (65°F)</td>
<td>29°C (85°F)</td>
<td>18°C (65°F)</td>
<td>29°C (85°F)</td>
</tr>
<tr>
<td>Networking/computer</td>
<td>18°C (65°F)</td>
<td>24°C (75°F)</td>
<td>18°C (65°F)</td>
<td>24°C (75°F)</td>
</tr>
</tbody>
</table>

b. Default demand limit (DL) setpoint offsets shall be based on zone type as shown in Table 3.1.1.1-2.

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Table 3.1.1.1-2 Default Demand Limit Offsets

<table>
<thead>
<tr>
<th>Zone Type</th>
<th>Heating</th>
<th></th>
<th></th>
<th>Cooling</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DL #1</td>
<td>DL #2</td>
<td>DL #3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General (unless listed below)</td>
<td>0.5°C (1°F)</td>
<td>1°C (2°F)</td>
<td>2°C (4°F)</td>
<td>0.5°C (1°F)</td>
<td>1°C (2°F)</td>
<td>2°C (4°F)</td>
</tr>
<tr>
<td>Laboratory spaces</td>
<td>0°C (0°F)</td>
<td>0.5°C (1°F)</td>
<td>1°C (2°F)</td>
<td>0°C (0°F)</td>
<td>0.5°C (1°F)</td>
<td>1°C (2°F)</td>
</tr>
<tr>
<td>Transient, gallery, restrooms</td>
<td>1°C (2°F)</td>
<td>1.5°C (3°F)</td>
<td>2°C (4°F)</td>
<td>1°C (2°F)</td>
<td>1.5°C (3°F)</td>
<td>2°C (4°F)</td>
</tr>
<tr>
<td>IDF/MDF</td>
<td>0°C (0°F)</td>
<td>0°C (0°F)</td>
<td>0°C (0°F)</td>
<td>0°C (0°F)</td>
<td>0°C (0°F)</td>
<td>0°C (0°F)</td>
</tr>
</tbody>
</table>

Revise Section 5.3.2.6 and 5.3.2.7 as follows:

5.3.2.6. Cooling Demand Limit Set-Point Adjustment. The active cooling setpoints for all zones shall be increased when a demand limit is imposed on the associated Zone Group. The operator shall have the ability to exempt individual zones from this adjustment through the normal BAS user interface. Changes due to demand limits are not cumulative.

   a. At demand-limit Level 1, increase setpoint by offset listed in Section 3.1.1.1.b0.5°C (1°F).
   b. At demand-limit Level 2, increase setpoint by offset listed in Section 3.1.1.1.b1°C (2°F).
   c. At demand-limit Level 3, increase setpoint by offset listed in Section 3.1.1.1.b2°C (4°F).

5.3.2.7. Heating Demand-Limit Set-Point Adjustment. The active heating setpoints for all zones shall be decreased when a demand limit is imposed on the associated Zone Group. The operator shall have the ability to exempt individual zones from this adjustment through the normal BAS user interface. Changes due to demand limits are not cumulative.

   a. At demand-limit Level 1, decrease setpoint by offset listed in Section 3.1.1.1.b0.5°C (1°F).
   b. At demand-limit Level 2, decrease setpoint by offset listed in Section 3.1.1.1.b1°C (2°F).
   c. At demand-limit Level 3, decrease setpoint by offset listed in Section 3.1.1.1.b2°C (4°F).
Heating demand limits may be desirable in buildings with electric heat or heat pumps or in regions with limited gas distribution infrastructure.