**REPI-70-21**

**IECC®: SECTION 202 (New), R403.1.1, R403.5.4 (New), CTA (New),**

**Proponents:**

Jeremy Williams, representing U.S. Department of Energy (jeremy.williams@ee.doe.gov)

**2021 International Energy Conservation Code**

**SECTION R202**

**GENERAL DEFINITIONS**

*Add new definitions as follows:*

**DEMAND RESPONSE SIGNAL.** A signal that indicates a price or a request to modify electricity consumption for a limited time period.

**DEMAND RESPONSIVE CONTROL.** A control capable of receiving and automatically responding to a *demand* *response signal*.

**SECTION R403**

**SYSTEMS**

*Revise text as follows:*

**R403.1 Controls.** Not less than one thermostat shall be provided for each separate heating and cooling system. The primary heating or cooling system serving the dwelling unit shall comply with Sections R403.1.1 and R403.1.2.

**R403.1.1 Programmable thermostat.** The thermostat controlling the primary heating or cooling system of the dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule to maintain different temperature setpoints at different times of the day. This thermostat shall include the capability to set back or temporarily operate the system to maintain zone temperatures of not less than 55°F (13°C) to not greater than 85°F (29°C). The thermostat shall be programmed initially by the manufacturer with a heating temperature setpoint of not greater than 70°F (21°C) and a cooling temperature setpoint of not less than 78°F (26°C).

**R403.1.2 Demand responsive thermostat.** The thermostat shall be provided with a *demand responsive control* capable of communicating with the Virtual End Node (VEN) using a wired or wireless bi-directional communication pathway and executing the following actions in response to a *demand response signal*:

1. Increasing the cooling set point by a maximum of *4°F (2.2°C)*
2. Decreasing the heating set point by a maximum of *4°F (2.2°C)*

Thermostats controlling single stage HVAC systems shall comply with Section R403.1.2.1. Thermostats controlling variable capacity and two-stage HVAC systems shall comply with Section R403.1.2.2. When a *demand responsive signal* is not available the thermostat shall be capable of performing all other functions.

**Exception:** Health care and assisted living facilities.

**R403.1.2.1 Single stage HVAC system controls.** Thermostats controlling single stage HVAC systems shall be provided with a *demand responsive control* that complies with one of the following:

* + - 1. Certified OpenADR 2.0a VEN, as specified under Clause 11, Conformance
	1. Certified OpenADR 2.0b VEN, as specified under Clause 11, Conformance
	2. Certified by the manufacturer as being capable of responding to a *demand response signal* from a certified OpenADR 2.0b VEN by automatically implementing the control functions requested by the VEN for the equipment it controls
	3. IEC 62746-10-1
	4. The communication protocol required by a controlling entity, such as a utility or service provider, to participate in an automated demand response program
	5. The physical configuration and communication protocol of CTA 2045-A

**R403.1.2.2 Variable capacity and two stage HVAC system controls.** Thermostats controlling variable capacity and two stage HVAC systems shall be provided with a *demand responsive control* that complies with the communication and performance requirements of AHRI 1380.

**SECTION R407**

**TROPICAL CLIMATE REGION COMPLIANCE PATH**

*Revise text as follows:*

**R407.2 Tropical climate region.** Compliance with this section requires the following:

1. Not more than one-half of the *occupied* space is air conditioned and is controlled by a thermostat in accordance with Sections R403.1.1 and R403.1.2.

**Add new standard(s) as follows:**

Chapter 6 Referenced Standards New

CTA

Consumer Technology Association Technology & Standards Department

1919 S Eads Street

Arlington, VA 22202

ANSI/CTA-2045-B – 2018: Modular Communications Interface for Energy Management

IEC

IEC Regional Centre for North America

446 Main Street 16th Floor

Worcester, MA 01608

IEC 62746-10-1 - 2018 Systems interface between customer energy management system and the power management system - Part 10-1: Open automated demand response

OpenADR

OpenADR Alliance

111 Deerwood Road

Suite 200

San Ramon, CA 94583

OpenADR 2.0a and 2.0b – 2019: Profile Specification Distributed Energy Resources