**Interpretation:** Attribution of Hot Water loads where multiple water heaters are present

**Designation:** 301-2019-016

**Approved:** July 31, 2020 by RESNET SDC 300

**Effective Date:** August 30, 2020

**Reference:**

Standard ANSI/RESNET/ICC 301-2019

 Page Number(s): \_\_\_multiple\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Sections(s): \_\_\_\_4.2.2.5.2.11\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 Table(s): \_\_\_\_4.2.2(1), note (p) and (t)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Relating to: Attributing hot water use to the appropriate water heater in both single family homes and multifamily buildings, where multiple water heaters provide hot water.

**Request from**:

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**Background Statement:** *Provided by person requesting the interpretation.*

Substantive changes were made in ANSI/RESNET/ICC 301-2019 to better address energy ratings for units in multifamily buildings. An example of this change was the following language, which was intended to address a common scenario in multifamily buildings where the water heater used to provide hot water to the *dwelling units* is different than the water heater that provides hot water to a *common laundry room*.

From Section 4.2.2.5.2.11: “Where more than one water heater exists in a Rated Home or building, the DWgpd load and CWgpd load must be attributed to the water heater providing that appliance with hot water.”

While not stated explicitly, the inherent assumption is that it can be clearly identified which water heater serves each appliance, which is a reasonable assumption for multifamily buildings where these water heaters would typically be associated with separate distribution systems.

Unfortunately, as written, it also applies to single-family detached homes.

While less common, a single-family detached home could also have multiple water heaters. If serving a single distribution system, it is not possible to identify which water heater provides hot water to the clothes washer or to the dishwasher. If there is more than one hot water distribution system, such assignment can reasonably be done, but raises a separate question that is not addressed in the standard at all (and not the subject of this interpretation): how to model multiple HW distribution systems within a Rated Home.

While the text in Section 4.2.2.5.2.11 was added ANSI/RESNET/ICC 301-2019, Table 4.2.2(1) still retains a note (p) from ANSI/RESNET/ICC 301-2014 that states: “For a Rated Home with multiple heating, cooling or water heating systems using different fuel types, the applicable system capacities and fuel types shall be weighted in accordance with the loads distribution (as calculated by accepted engineering practice for that equipment and fuel type) of the subject multiple systems.”

**Proposed Interpretation:** *Provided by person requesting the interpretation.*

Based on the fact that there are two sections that describe how to distribute HW loads when multiple water heaters are present, the interpretation is that Section 4.2.2.5.2.11 must be followed only where it is evident which water heater provides an appliance with hot water. In the case where this cannot be clearly determined, the loads should not be arbitrarily attributed to one water heater over another, but distributed following the requirement in note (p) of Table 4.2.2(1).

**SDC Response:**

Is the proposed interpretation correct? \_\_\_X\_\_ Yes \_\_\_\_\_ No

**SDC Comments:**

No comment