INTERPRETATION IC 90.1-2013-23 OF
ANSI/ASHRAE/IES STANDARD 90.1-2013
Energy Standard for Buildings Except Low-Rise Residential Buildings

Date Approved: June 24, 2023

Request from: Scott Lindgren, U.S. Army Corps of Engineers, 1616 Capitol Avenue, Omaha, NE 68102.

Reference: This request for interpretation refers to the requirements presented in ANSI/ASHRAE/IES Standard 90.1-2013, Section 8.4.3.1, regarding monitoring of electrical energy types not falling under the categories encompassed by items (b) through (e).

Background: Section 8.4.3.1 lists four electrical energy categories which must be monitored in addition to total electrical energy: HVAC systems, interior lighting, exterior lighting, and receptacle circuits. An exception exists permitting up to 10% of the load for each of the non-total electrical energy categories to be from other electrical loads.

Section 8.4.3.1 does not address load types which do not fit the definition of any monitor category identified in items (b) through (e).

Many loads exist in typical buildings which do not fall under the explicit categories such as overhead doors and workshop equipment which is hardwired with a disconnect switch rather than via receptacle connection. These loads frequently account for greater than 10% of the load on the connected panel (in violation of the Section 8.4.3.1 Exception), but possibly not greater than 90% (in which case, the panel would not need to be monitored).

It is a given that if the electrical load not fitting the definition of any monitor category is less than or equal to 10% of the load for a given monitor, the load may be connected to the monitored portion of the distribution system in question without requiring additional monitoring equipment and programming.

The predicament is whether non-receptacle equipment loads which also do not fit the categories of HVAC systems, interior lighting, or exterior lighting exceeding 10% of the monitored load either (a) need to be accounted for as a separately monitored category, (b) need to be supplied separately but not required to be monitored, or (c) may be included in a similar load type such as receptacle circuits and monitored as a receptacle circuit.

Similar language has been used in 90.1-2016 and 90.1-2019.

Interpretation: Under no circumstances may an electrical load (or set of electrical loads), which (a) do not fit the definition of any monitor category and (b) exceed 10% of the monitor category load, be permitted to connect downstream of a monitoring device for a given monitoring category unless the electrical load (or set of electrical loads) which do not fit the definition of any monitor category are individually or collectively monitored and their consumption contributions deducted from the given upstream monitoring category.

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In other words, electrical loads which do not fit the definition of any monitor category are not permitted to be monitored collectively with one of those monitor categories unless the loads account for less than or equal to 10% of the load for a given monitor.

Question: Is this interpretation correct?

Answer: No

Comments

8.4.3.1(a) measures total electrical energy including process loads. This is essentially the master electric meter. All electric loads are covered by 8.4.3.1(a).

However, if the interpretation question is at the circuit level related to the smaller loads, that is a different question. Categories 8.4.3.1(b) – (e) are sub-monitored, specific types of loads. The 10% value applies to these categories. If the load is not part of (b) – (e), but exceeds 10% of the load, it cannot be part of those metered sub-loads.

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