

Changes to Standard 90.4-2019

Addendum	Section(s) Affected	Description of Changes*
a	6.5	<p>Addendum a</p> <ul style="list-style-type: none"> encourages recovery of waste heat from data centers for use in space heating and industrial applications; encourages siting of data centers in proximity to heat-consuming commercial and industrial processes in order to take advantage of heat transfer, minimize waste, and reduce overall energy use; improves and clarifies ambiguous and obsolete language in Section 6.5; and removes language that states in part, "...if the data center utilizes mechanical cooling, the calculated rack inlet temperature and dew point must be within <i>Thermal Guidelines for Data Processing Environments</i> recommended thermal envelope for more than 8460 of the hours per year." <p>Many data centers operate outside the <i>ASHRAE Thermal Guidelines</i> for more than 300 hours per year and do not have the capacity to stay within them for 8460 hours. This addendum allows designers to model their data centers as they are truly intended to operate.</p>
b	11.2	Addendum b clarifies how credit can be taken for renewables. The renewables credit is limited to 5% of the IT load in order to encourage renewable energy while still requiring energy-efficient mechanical and electrical systems.
d	3.2, 8.4.1.4, 8.4.1.8, 11.2, 12	Interpretation of IC 90.4-2016-1-OF was approved on January 8, 2020, in response to a Request for Interpretation of the Standard 90.4 consideration of diesel-rotary UPS systems (DRUPS) and the corresponding accounting of these systems in the electrical loss component (ELC). In crafting the IC, the committee identified several marginal changes to Standard 90.4 definitions and passages in Section 8 that would further clarify the issue. Addendum d includes those changes and other minor corrections to spelling and text, incorporates the latest ELC values into Section 11, and updates normative references to the standard.
e	11.3	Addendum e adds language to Section 11 intended to clarify how compliance with Standard 90.4 can be achieved through the use of shared systems.
f	5.2.1	Addendum f modifies Section 5.2.1 to add specific language about building envelope criteria for data centers and how it is to be accounted for in the MLC calculations.
h	3.2, 8.2.2, 8.4.1, 8.4.1.4, 8.4.1.5, 8.4.1.7, 8.4.1.8, Table 8.5, Table 8.6	<p>Addendum h</p> <ul style="list-style-type: none"> increases efficiency requirements for the UPS segment of the electrical loss component (ELC); adjusts the minimum efficiency requirements for the information technology equipment (ITE) distribution segment of the ELC to correspond to the loading levels more common to data centers; removes the alternative method in Section 8.2 because of more stringent electrical distribution efficiency requirements in data centers; and eliminates the incoming service segment of the ELC from the ELC calculation.
i	12	Addendum i updates normative references.

* These descriptions may not be complete and are provided for information only.