ASHRAE®

ADDENDA

ANSI/ASHRAE Addendum g to
ANSI/ASHRAE Standard 90.4-2022

Energy Standard for Data Centers

Approved by ASHRAE the American National Standards Institute on January 31, 2024.

This addendum was approved by a Standing Standard Project Committee (SSPC) for which the Standards Committee has established a documented program for regular publication of addenda or revisions, including procedures for timely, documented, consensus action on requests for change to any part of the standard. Instructions for how to submit a change can be found on the ASHRAE® website (www.ashrae.org/continuous-maintenance).

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FOREWORD

Addendum g modifies Sections 3 and 6 to support the regulation of process heat and process ventilation. Specific details about any heated standby generators or ventilation or humidity control equipment systems now will be necessary to include in the MLC.

The baseline process cooling MLC values provided in Table 6.5 were based on simulation data for a mechanical system designed to condition only the ITE equipment. The energy simulations did not include cooling for UPS and other electrical losses.

To accommodate these increases in annual energy for data center HVAC, the project maximum MLC mechanical compliance target values in Table 6.5 were made less stringent (larger).

The new calculated annual ventilation and heat totals are shown as segment values in Table 6.5. These new mechanical segment values are intended to be used as the electrical segments are intended to be used, allowing trade-offs that meet the same overall MLC or as a subtarget allowance for when the scope is limited to a single segment or two (wherever Section 11 did not apply to the previous data center design compliance). This way, the addition of a single piece of cooling equipment will no longer trigger the need to recalculate ELC and MLC for the entire data center including the new cooling equipment.

Changes were made in anticipation of water-cooled ITE such that we will now regulate data center cooling systems, not just systems that cool the data center area.

The definition for area (used in watts per square foot determination) was changed to match the Standard 90.1 definition.

Informative Note: In this addendum, changes to the current standard 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.

Addendum g to Standard 90.4-2022

Modify Section 3 as shown.

3. DEFINITIONS

air, supply: air to be delivered by ~~mechanical or natural *ventilation*~~ design to a *space*, composed of any combination of *outdoor air*, *recirculated air*, or ~~transfer air~~ air designed to move from another *space*.

annualized mechanical load component (annualized MLC): ~~the sum of all cooling, fan, pump, and heat-rejection annual *energy* use divided by the *data center ITE energy*~~ the result of dividing the sum of the annual process cooling energy, annual process heating energy, and annual process ventilation energy by the annual total data center energy as precisely defined by Equation 6.5.

bins: the practice of organizing data points into closely similar groupings in order to simplify calculations. For Standard 90.4 *bin* requirements, see Section 6.5.1.

cabinet: a container that encloses connection devices, terminations, apparatus, wiring, and *equipment* mounting rails.

conditioned floor area: ~~see *conditioned floor area, gross* in ANSI/ASHRAE/IES Standard 90.1.~~ the floor area of rooms, designed for a *data center*'s *ITE*, that receive cooling and/or heating to maintain temperature and/or humidity. (***Informative Note:*** See "white space" in Figure C-1 of Informative Appendix C.)

control: see ANSI/ASHRAE/IES Standard 90.1.

cooling energy: the sum of all annual site *energy* required to provide cooling or heat rejection via vapor compression, dehumidification, humidification, evaporation, absorption, adsorption, or other means including the seasonal direct or indirect use of cooler outdoor air, including the flow of heat transfer fluids. See Section 6.5.3 for additional information.

data center energy: annual *energy* use of the *data center*, including all *ITE energy* plus input ~~*energy*~~ ~~that supports the~~ to ~~*ITE* and~~ *data center* ~~*space*~~ *systems energy*.

~~***fan brake power:*** the power delivered to the fan's shaft. Brake power (bp) does not include the mechanical drive *losses* (e.g., belts, gears).~~

heating energy: the annual input energy to *data center systems* intentionally designed to raise the temperature of a liquid or the temperature or humidity of an air stream, including the flow of heat transfer fluids. See Section 6.5.4 for additional information.

ITE enclosure: a rack, *cabinet*, or chassis that is designed to mount and enable ~~appropriate *ventilation*~~ cooling of *ITE*.

process cooling segment: annual *cooling energy* required to remove the *ITE* heat and the losses calculated for the *design ELC*.

process heating segment: annual *heating energy* required to maintain the design temperature of standby power systems and their rooms or enclosures.

process ventilation segment: the annual *heating energy* and *cooling energy* of the *data center systems* designed to humidify or dehumidify the data center and to introduce outdoor air for continuous *ventilation* or pressurization and to power any continuous exhaust. (***Informative Note:*** The *process ventilation segment* compliance value is based only on a minimum *ambient air* flow, so both the *process cooling* and the *process ventilation segments* can reduce their calculated values with economizer designs that increase *ambient air* exchange for process cooling or reduce *ventilation* temperature during appropriately cooler weather.)

motor brake power: the power delivered from the motor's output, including the mechanical drive *losses* (e.g., belts, gears) in the conditioned *space.*

rack: a method of *ITE equipment* installation and cable organization that consists of a set of open vertical mounting rails.

terminal: a device by which *energy* from a *system* is finally delivered (e.g., registers, diffusers, lighting fixtures, isolation valves ~~faucets~~), terminating prior to the interface with the *ITE enclosure*. For devices used for other purposes or in other *systems*, the definition of *terminal* in ANSI/ASHRAE/IES Standard 90.1 applies.

Modify Section 4 as shown.

4.1.1.5 Changes in Space Conditioning. ~~Whenever unconditioned space or semiheated space that is a data center space is converted to a conditioned space, such conditioned space shall be brought into compliance with all requirements of this standard that apply to the data center space's building envelope, heating, ventilating, air conditioning, service water heating, power, lighting, and other systems and equipment of the space as if the data center space was new~~ Whenever *unconditioned space* or semiheated *space* that is a *data center space* is converted to a *data center* and *space* for its *systems*, such *space* shall be brought into compliance with all requirements of this standard that apply to the *data center space*'s *building envelope*, heating, ventilating, air conditioning, *service water heating*, power, lighting, and other *systems* and *equipment* of the *space* as if the *data center space* was new. Changes of *space* conditioning in other *spaces* shall comply with ANSI/ASHRAE/IES Standard 90.1, Section 4.1.1.5.

Modify Section 6 as shown.

6.1.1 Scope. Section 6 specifies the *efficiency* requirements for *heating, ventilating,* and *air-conditioning* (*HVAC) systems* installed to serve *data centers* ~~*spaces*~~. *HVAC systems* installed to serve other *spaces* shall comply with ANSI/ASHRAE/IES Standard 90.1, Section 6 or as adopted by the *AHJ*.

6.1.1.1 New Buildings. Mechanical *equipment* and *systems* installed to serve the heating, cooling, and ventilating needs of *data centers* ~~*spaces*~~ in new *buildings* shall comply with the requirements of ~~this section as described in Section 6.2 or Section 11~~ Section 4.2.1.1.

6.1.1.2 Additions to Existing Buildings. New mechanical ~~Mechanical~~ *equipment* and *systems* installed to serve the heating, cooling, or *ventilating* needs of *data centers* ~~*spaces*~~ in *additions* shall comply with the requirements of ~~this~~ section 4.2.1.2 ~~as described in Section 6.2 or Section 11~~.

Exception to 6.1.1.2: ~~Where HVAC air is provided to a *data center space* in an *addition* by using the existing *HVAC systems* and *equipment*, such *existing systems* and *equipment* shall not be required to comply with this standard. However, any new *systems* or *equipment* installed must comply with specific requirements applicable to those *systems* and *equipment*.~~ Where existing *HVAC systems* and *equipment* are extended to a *data center addition*, such *existing systems* and *equipment* shall not be required to comply with this standard.

[. . .]

Delete Section 6.1.1.3.2 as shown.

~~**6.1.1.3.2** New heating, ventilating and cooling *systems* installed to serve previously uncooled *spaces* shall comply with this section as described in Section 6.2.~~

Modify Section 6.5 as shown.

6.5 Maximum Annualized Mechanical Load Component (Annualized MLC). *Annualized MLC* shall be calculated using Equation 6.5. The resulting value shall be less than or equal to the value in Table 6.5, "Maximum *Annualized Mechanical Load Component (*Maximum *Annualized MLC)*."

~~$$\text{Annualized MLC} = \frac{\sum N = 25, 50, 75, 100(\text{MechE}_N - \text{HeatRec}_N)}{\sum N = 25, 50, 75, 100(\text{DataCenterITE}_N)} \quad (6.5)$$~~

$$\textit{Annualized MLC} = \frac{\sum \text{MechE for 25\%, 50\%, 75\%, 100\% ITE design}}{2.5 \times 8760 \text{ hours} \times \textit{ITE design power}} \quad (6.5)$$

where

MechE_N ~~(kWh)~~ = (*Process cooling segment* + *Process ventilation segment* + *Process heating segment*), in kWh, determined annually and according to the design at that percentage of ITE design; to show effect of heat recovery on these systems, see Section 6.5.2(d); to show the effect of on-site renewables on MLC, see Section 11.2.

~~total annual *energy* consumed by all mechanical *equipment* (e.g., fans, pumps, motors, drives, compressors, humidifiers, dehumidifiers, water filtration or treatment *equipment*) at a constant *ITE* load of *N*% of the design *ITE* load. This includes mechanical *equipment* serving *data center* electrical *equipment* (e.g., *UPS systems* and *transformers*). *Energy* use of shared *systems* that serve both *data center spaces* and non-*data-center spaces* must be prorated on an hourly capacity-weighted basis. (***Informative Note:*** For example, if 62% of the load on a chiller plant in a given hour comes from *data center spaces*, with the remaining 38% from non-*data-center spaces*, then only 62% of the total chiller plant *energy* for that hour can be included in the MechE.)~~

~~Mechanical *equipment energy* for *equipment* dedicated to *data center spaces* shall be calculated with Typical Meteorological Year Version 3 (TMY3) data with 8760 hourly bins or that is binned by dry bulb and wet bulb (or *dew point*) with a resolution ≤2°F (1°C).~~

~~HeatRec_N (kWh)~~ = ~~net increase in *data center* mechanical *equipment energy* caused by transferring waste heat from the *data center*, when the *data center* is operating at a constant *ITE* load of *N*% of the design *ITE* load, to a non-*data-center* mechanical *system* (e.g., *space* heating or industrial process *energy*). The net offset is quantified by simulating the *data center* with and without *data center* heat transfer. (***Informative Note:*** The purpose of the HeatRec term is to ensure that, by encouraging the transfer of otherwise wasted heat to a useful purpose, the design is not penalized in the *MLC* calculation by any net *energy* increases incurred by adding heat transfer *equipment* [e.g., transfer fans] or operating *data center* cooling *equipment* at lower *efficiency* in order to facilitate heat recovery [e.g., operating a heat recovery chiller at high lift]).~~

~~Annual *energy* for shared *systems* and for heat recovery shall be calculated using an 8760 hour TMY3 file and accurate heating/cooling load profiles.~~

~~Data CenterITE_N (kWh)~~ = ~~total annual *energy* consumed by the *ITE* at a constant *ITE* load of *N*% of the design *ITE* load. For example, $\text{DataCenterITE}_{50}$ for a design *ITE* load of 1000 *kW* = 1000 *kW* × 8760 h × 0.5 = 4,380,000 kWh. *ITE energy* does not include *UPS losses* but does include server fan *energy*.~~

~~Calculations/simulations shall be made using the control sequences and set points in the compliance documentation. (***Informative Note:*** As an example, if a *data center* includes redundant air handlers, but all air handlers~~

~~will operate in unison at reduced speed during normal operation, then calculations will reflect *equipment* part-load performance at those simulated conditions as noted on the design documents.)~~

~~Mechanical *equipment energy* not provided by electricity shall be converted to kWh using the following formula: 3412 Btu = 1.0 kWh.~~

~~**Exception to 6.5:** *Energy* from shared *systems* shall be calculated in accordance with Section 11.3.~~

Modify Section 6.5 informative notes. Previously numbered Notes 1 and 2 are now 8 and 9 but otherwise remain unchanged.

Informative Notes:

1. All values are in kilowatt-hours of annual *energy*. See Section 6.5.1 for MLC calculation requirements.
2. The calculated *annualized MLC* does not directly compare to a *data center*'s annual measured design power usage effectiveness (PUE); the calculated *annualized MLC* is calculated using archived weather (not measured during actual weather) and does not take any electrical distribution *losses* into account.
3. Examples of *annualized MLC* calculations reviewed by the committee members can be found at www.ashrae.org/XXXX.
4. The *process cooling segment* values were based on 20°F (11°C) HVAC Δ*T* design *return air* temperature of 85°F (29°C). These maximum *annualized MLC* values were developed using *equipment* currently available from multiple *manufacturers*. For compliance calculations, use the *space* design condition(s) and *ITE* Δ*T* specific to the project.
5. The *process heating segment* values for *data center ITE design power* > 300 kW are based on an indoor heated *space* with insulation meeting ANSI/ASHRAE/IES Standard 90.1. The *process heating segment* values for *data center ITE design power* = 300 kW were based on individual manufacturer's outdoor enclosures. Those enclosures and spaces typically stay heated 24/7 for ready serviceability. Generator coolant heaters were based on thermostat control of resistance heat set to 120°F (49°C with a coolant pump operating and generator heat contributing to room or enclosure heating. All of the design's generators were assumed to be installed and heated at each of the calculated *ITE* levels (25%, 50%, 75%, 100%).
6. The *process ventilation segment* values were based on a system that introduces or pressurizes the *data center* with 3.8 cfm (1.8 L/s) of outside air per kilowatt-hour of part-load *ITE* power full time. Preheat and direct humidification were assumed along with DX dehumidification to keep the *data center* dew point within *Thermal Guidelines for Data Processing Environments*, 4th Edition, recommended thermal envelope. For *data centers* with *ITE* power >300 kW, that *ventilation* preheat was assumed to be mostly avoided or recovered.
7. A *design professional* calculates a particular *data center* system's *annualized MLC* by modeling the routine intended electrical and mechanical efficiency for each hour, or *bin*, of a standard local year's weather across several *ITE* part-load power levels. The resulting calculated value, once reviewed, becomes *the annualized MLC* compliance value for that particular electrical and mechanical design for that *data center*'s initial construction or subsequent modification.

~~1~~8. As an example, if a *data center* receives chilled water from a central chilled-water plant that serves the *data center* and other *spaces* (i.e., *spaces* that do or do not meet the definition of a *data center*), the total shared *system* input *energy* is multiplied by the *data center*'s fraction of total *system* capacity for each hour to determine the *data center*'s input *energy* in accordance with Section 11.3.

~~2~~9. As an example, if a natural gas appliance uses 1 therm gas input, 1 therm = 100,000 Btu. Using the formula 100,000 Btu/(3412 Btu/1.0 kWh) = 29.3 kWh equivalent.

Add new Section 6.5.1 and renumber subsequent sections.

6.5.1 Annualized MLC for Partial Renovations. For a facility being renovated, where only one or two of the *annualized MLC* segments is being modified, compliance requirements in Table 6.5 apply only to the segments being modified. Trade-offs are allowed among *process cooling*, *process heating*, and *process ventilation segment* values to meet the aggregate requirement of only those *annualized MLC* segments involved in the project's scope.

Replace Table 6.5 with the following table.

Table 6.5 Maximum Annualized Mechanical Load Component (Annualized MLC)

	Design ITE Power > 300 kW				Design ITE Power ≤ 300 kW			
Climate Zone[a]	Process Heating Segment	Process Ventilation Segment	Process Cooling Segment	Maximum Annualized MLC	Process Heating Segment	Process Ventilation Segment	Process Cooling Segment	Maximum Annualized MLC
0A	0	0.01	0.28	0.29	0.01	0.01	0.35	0.37
0B	0	0.01	0.31	0.32	0.01	0.01	0.39	0.41
1A	0	0.01	0.29	0.30	0.01	0.01	0.35	0.37
1B	0	0.01	0.30	0.31	0.01	0.01	0.37	0.39
2A	0.01	0.01	0.26	0.27	0.01	0.01	0.33	0.35
3A	0.01	0	0.23	0.24	0.01	0.01	0.31	0.33
4A	0.01	0	0.20	0.21	0.02	0.01	0.30	0.33
5A	0.01	0	0.18	0.19	0.02	0.02	0.29	0.34
6A	0.01	0	0.18	0.19	0.02	0.02	0.27	0.31
2B	0.01	0	0.19	0.20	0.01	0.01	0.31	0.33
3B	0.01	0	0.19	0.20	0.01	0	0.30	0.33
4B	0.01	0	0.16	0.17	0.01	0.01	0.27	0.29
5B	0.01	0	0.16	0.17	0.02	0.02	0.26	0.30
6B	0.01	0	0.16	0.17	0.02	0.02	0.27	0.31
3C	0.01	0	0.16	0.17	0.01	0	0.26	0.27
4C	0.01	0	0.16	0.17	0.01	0	0.26	0.27
5C	0.01	0	0.16	0.17	0.01	0	0.26	0.29
7	0.01	0	0.16	0.17	0.03	0.03	0.26	0.31
8	0.01	0.01	0.14	0.15	0.03	0.04	0.25	0.32

a. Climate zones are as listed in ANSI/ASHRAE Standard 169.

Modify Sections 6.5.2 and 6.5.2.1 as shown.

6.5.26.5.1 Annualized MLC Calculation Compliance Requirements. Annual *energy* calculations shall use the following requirements.

a. Weather data shall be based on one of the following: taken exclusively from the NSRB Typical Meteorological Year Version (TMY3) file for a site with location and altitude nearest the *data center site*. (***Informative Note****:* Some *bins* will contain more annual hours than other *bins* and so are proportionally factored into the model's annual results.)

1.b. Weather data shall be divided into calculation bins*bins* with a maximum 2°F (1°C) increment. *Systems* using an evaporation process will use wet-bulb with a mean coincident dry-bulb temperature for creating the bins*bins*. *Systems* with a non-evaporative process shall use dry-bulb temperature with mean coincident wet-bulb moisture ratio for creating the bins*bins*. Full hourly calculations (using 8760 *bins*, each of one hour) are also acceptable to use.

2. Typical Meteorological Year Version 3 (TMY3) for full hourly calculations with 8760 bins per year.

b.c. The *systems' energy* calculation may consider operation of *economizer* capacity in the design and available *redundant equipment* at the 100% *ITE* load condition and separately at the *ITE* part-load condition if calculated using partially loaded *equipment efficiencies*.-

(***Informative Note:*** Mechanical *systems* can be calculated to operate at any temperature, with or without an *automatic* reset schedule; however, the fluid and air temperatures used in the calculation must not exceed the conditions specified for *equipment* selection by the design [i.e., the scheduled coil entering and leaving temperatures, the fan capacities, the presence or absence of variable-speed drives or compressor unloading features]).

d. For *data center* designs where heat recovery measures are being provided, Equation 6.5 shall be calculated for compliance with each of the design's heat recovery measures either "active" or "inactive" (at the discretion of the *design professional*.) (***Informative Note:*** This standard leaves all energy or emission savings credits available for the benefit of the *data center*'s host or neighboring projects, without the possibility of double counting such energy or emission credits. *Data centers* can be reliable and economical all-electric heat sources for nearby buildings and industrial processes. Ideally, potential neighbors and landlords will discover that data centers are an economical way to switch from fossil fuels to a grid electric source for their needed heat. Because the success of heat recovery requires proximity between *data center* and neighboring buildings, any lower-efficiency *ITE* cooling modes associated with heat export may be considered "inactive" in the *data center's annualized MLC* compliance calculation. Any on-site heat recovery measures may be shown as "active" to lower the *annualized MLC* used for compliance.)

~~c.~~e. If the *data center* uses *mechanical cooling*, the calculated *rack* ~~rack~~ inlet temperature and *dew point* shall be within *Thermal Guidelines for Data Processing Environments*~~, 4th Edition,~~ recommended thermal envelope for more than 8460 of the hours per year. If the *data center* does not use *mechanical cooling*, this requirement does not apply.

f.~~**6.5.1.1 Data Center Energy.** The *data center energy* calculations shall be completed separately for 100% and for part-load *ITE* capacity in the calculations. The system's~~ Any *UPS* and *transformer* cooling *system's* ~~loads~~ input *energy* ~~must~~ shall also be included in this term, evaluated at their corresponding part-load *efficiencies.*

g. The specific electrical losses used to calculate a project's *annualized MLC* shall be greater than or equal to the same electrical *losses* used to calculate the project's *design ELC* used for compliance.

h. Reviewable *annualized MLC* calculations shall separately report results for 100%, 75%, 50%, and 25% *ITE* capacity in the calculations.

~~**6.5.1.2**~~**6.5.2.1 Calculated Quantity of Operating Units (*N*).** As shown in Table 6.5.1.2, the number of HVAC units required to meet the load can vary based on *ambient air design conditions* or a host of other factors determined by the *design professional*. When *redundant equipment* is provided with automatic variable speed fan or pump drive (or other means of reducing part-load input power), it shall be permitted to be used in calculations to demonstrate compliance only ~~when the design uses partially loaded *equipment efficiencies*, and these~~ if part-load *equipment* quantities are clearly shown in the design's *annualized MLC* calculation and on the project's plans.

Add Sections 6.5.3 through 6.5.9 as shown.

6.5.3 Cooling Energy

6.5.3.1 *Cooling energy* shall include, but is not limited to, input energy from the following *equipment*:

a. Chillers
b. Heat pumps
c. Air conditioners
d. Fan systems part of any cooling or heat rejection system, including cabinet fans
e. Pump systems part of any cooling or heat rejection system
f. Relief fans required due to the seasonal direct use of outdoor air
g. Cooling towers and other heat rejection systems

6.5.3.2 *Cooling energy* shall represent the effect of any freeze-protection chemicals added to circulating fluids.

6.5.3.3 *Cooling energy* shall not include input energy from the following *equipment*:

a. Fans intrinsic to the *ITE*
b. Fans intrinsic to the *UPS equipment*
c. Cooling energy required for ventilation or makeup air if already included in the *process ventilation segment*

6.5.3.4 In the case of cooling provided by a source other than electricity, the energy consumption shall be converted to input kilowatt-hours (input kWh = output kWh/overall cooling efficiency at that hour).

6.5.4 Heating Energy

6.5.4.1 *Heating energy* shall include, but is not limited to, input energy from the following *equipment*:

a. Heaters associated with generators (e.g., battery heaters, enclosure heaters, block heaters, coolant heaters, etc.)
b. Heaters for freeze protection (e.g., tank heaters, tower basin heaters, pipe heaters, heat trace, etc.)

6.5.4.2 *Heating energy* shall not include the following:

a. Input energy from heat recovery systems (see Section 11.3 for details.)
b. Heating energy for ventilation or makeup air if already included in the *process ventilation segment*

6.5.4.3 In the case of heating provided by a source other than electricity, the energy consumption shall be converted to input kilowatt-hours (input kWh = output kWh/overall heating efficiency at that hour).

Informative Note: If the process cooling and process ventilation share the same fan or cooling machinery, that fan or cooling machinery energy may be adequately accounted for in the *process cooling segment*.

[. . .]

Modify Section 6.6.2.1 as shown.

6.6.2.1 Drawings. *Construction documents* shall require that, within 90 days after the date of *system* acceptance, *record drawings* of the actual installation be provided to the *building* owner or the designated representative of the *building* owner. *Record drawings* shall include, as a minimum, the location and performance data on each piece of *equipment*; general configuration of the duct and pipe *distribution system*, including sizes; and the *terminal* air or water design flow rates. Plans shall show the location of *equipment* to be installed and locations for all deferred *equipment*. Describe amounts of mechanical and electrical *equipment* assumed (in each part-load MLC calculation) to be installed and operating during the 25%, 50%, 75% and 100% *ITE* power level in the associated MLC compliance calculation.

Modify Section 11 as shown.

11. ALTERNATIVE COMPLIANCE METHOD

[. . .]

Examples

For a particular *data center* in Climate Zone 1A with a single-feed *UPS* at 100% load and *Data Center ITE Design Power >300 kW*, the maximum MLC = 0.2600.30 from Table 6.5, and the maximum ELC = 0.110 from Table 8.6. Adding the two values together provides a maximum overall *systems* design value of 0.3700.410.

Maximum MLC Value [0.2600.30] + Maximum ELC Value [0.110] =
Maximum Overall *Systems* Value [0.3700.410]

If the electrical *system* design produces a *design ELC* of 0.1250.185, which exceeds the maximum ELC value, a more efficient mechanical *system* can be used to offset this. If the mechanical *system* had an *annualized MLC* of 0.2250.220 then the overall *systems* design value would be less than the maximum overall *systems* design value and would demonstrate compliance with the standard.

Annualized MLC Value [0.2250.220] + *Design ELC* Value [0.1250.185] =
Overall *Systems* Design Value [0.4660.405]

[. . .]

POLICY STATEMENT DEFINING ASHRAE'S CONCERN FOR THE ENVIRONMENTAL IMPACT OF ITS ACTIVITIES

ASHRAE is concerned with the impact of its members' activities on both the indoor and outdoor environment. ASHRAE's members will strive to minimize any possible deleterious effect on the indoor and outdoor environment of the systems and components in their responsibility while maximizing the beneficial effects these systems provide, consistent with accepted Standards and the practical state of the art.

ASHRAE's short-range goal is to ensure that the systems and components within its scope do not impact the indoor and outdoor environment to a greater extent than specified by the Standards and Guidelines as established by itself and other responsible bodies.

As an ongoing goal, ASHRAE will, through its Standards Committee and extensive Technical Committee structure, continue to generate up-to-date Standards and Guidelines where appropriate and adopt, recommend, and promote those new and revised Standards developed by other responsible organizations.

Through its *Handbook*, appropriate chapters will contain up-to-date Standards and design considerations as the material is systematically revised.

ASHRAE will take the lead with respect to dissemination of environmental information of its primary interest and will seek out and disseminate information from other responsible organizations that is pertinent, as guides to updating Standards and Guidelines.

The effects of the design and selection of equipment and systems will be considered within the scope of the system's intended use and expected misuse. The disposal of hazardous materials, if any, will also be considered.

ASHRAE's primary concern for environmental impact will be at the site where equipment within ASHRAE's scope operates. However, energy source selection and the possible environmental impact due to the energy source and energy transportation will be considered where possible. Recommendations concerning energy source selection should be made by its members.

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About ASHRAE

Founded in 1894, ASHRAE is a global professional society committed to serve humanity by advancing the arts and sciences of heating, ventilation, air conditioning, refrigeration, and their allied fields.

As an industry leader in research, standards writing, publishing, certification, and continuing education, ASHRAE and its members are dedicated to promoting a healthy and sustainable built environment for all, through strategic partnerships with organizations in the HVAC&R community and across related industries.

To stay current with this and other ASHRAE Standards and Guidelines, visit www.ashrae.org/standards, and connect on LinkedIn, Facebook, Twitter, and YouTube.

Visit the ASHRAE Bookstore

ASHRAE offers its Standards and Guidelines in print, as immediately downloadable PDFs, and via ASHRAE Digital Collections, which provides online access with automatic updates as well as historical versions of publications. Selected Standards and Guidelines are also offered in redline versions that indicate the changes made between the active Standard or Guideline and its previous version. For more information, visit the Standards and Guidelines section of the ASHRAE Bookstore at www.ashrae.org/bookstore.

IMPORTANT NOTICES ABOUT THIS STANDARD

To ensure that you have all of the approved addenda, errata, and interpretations for this Standard, visit www.ashrae.org/standards to download them free of charge.

Addenda, errata, and interpretations for ASHRAE Standards and Guidelines are no longer distributed with copies of the Standards and Guidelines. ASHRAE provides these addenda, errata, and interpretations only in electronic form to promote more sustainable use of resources.

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