



BUILDINGS
2020-008
BULLETIN
TECHNICAL

ISSUANCE DATE
May 12, 2020

SUPERSEDES
Buildings Bulletin 2017-004

ISSUER: Gus Sirakis, P.E.

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First Deputy Commissioner

PURPOSE: This document clarifies conditions under which an addition, alteration, or repair to a lighting or electrical power system or control equipment may not be required to comply with the New York City Energy Conservation Code (NYCECC), pursuant to NYCECC Chapter R5, Chapter C5, and Appendix CA (amendments to ASHRAE 90.1-2016).

SUBJECT(S): Additions, lighting systems; Alterations, lighting systems; Repairs, lighting systems; Replacement, lighting systems; Lighting systems, luminaires; Lighting systems, lighting fixtures; Lighting systems, lighting fixtures, lamps; Lighting systems, lighting fixtures, ballasts; Lighting systems, lighting power density; Interior lighting; Exterior lighting; Lighting systems, commissioning; Electrical, electrical or control equipment; Electrical, energy use; New York City Energy Conservation Code; Energy Code

In accordance with NYCECC Chapter R5, Chapter C5, R404, C405, C408, and ASHRAE 90.1 sections 8, 9 and 10, additions, alterations, and/or repairs to lighting and/or power systems and equipment shall be as follows, provided that energy use of the building is not increased:

I. DEFINITIONS

In accordance with NYCECC Chapter R5, Chapter C5, R404, C405, C408, and ASHRAE 90.1 sections 8, 9 and 10, additions, alterations, and/or repairs to lighting and/or power systems and equipment shall be as follows, provided that energy use of the building is not increased:

A. High-efficacy. Lighting fixtures having lamps with an efficacy of at least 65 lumens per watt, or having a total luminaire efficacy of at least 45 lumens per watt.

II. INTERIOR LIGHTING SYSTEMS

Lighting fixtures having lamps with an efficacy of at least 65 lumens per watt, or having a total luminaire efficacy of at least 45 lumens per watt:

A. Luminaires. When following the NYCECC Chapter C5, and 10 percent or more of the luminaires within a space are being replaced, the alteration or repair in each case shall comply with the lighting provisions of the NYCECC as applicable. When following the NYCECC Chapter R5, and 20 percent or more of the luminaires within a space are being replaced, the alteration or repair in each case shall comply with the lighting provisions of the NYCECC as applicable. When following ASHRAE 90.1, and more than 10 percent of the connected lighting load within a space or area is being replaced, the alteration or repair in each case shall comply with the lighting provisions of ASHRAE 90.1 as applicable.

B. Lamps. Lamp replacement will be as follows:

1. *Dwelling units.* Replacement of lamps within dwelling units shall be by high-efficacy lamps where such lamps are available for such lighting fixtures, but such replacement need not exceed the requirements of sections NYCECC R404 and C405.
2. *Replacement of lamps but not ballasts in other than dwelling units.* Lamps within fixtures shall be replaced by high-efficacy lamps unless the owner or applicant can demonstrate that such lamps are not available for such fixtures.

C. Replacement of ballasts but not lamps. Ballast replacement within fixtures shall be with high-efficiency ballasts unless the owner or applicant can demonstrate that such ballasts are not available for such fixtures.**D. Controls.** Replacement of lighting controls shall comply with the provisions of the NYCECC or ASHRAE 90.1, as per the following:

1. When following the NYCECC Chapter C5, and 10 percent or more of the luminaires within a space are being replaced, the alteration or repair in each case shall comply with the control provisions of the NYCECC, as applicable.
2. When following the NYCECC Chapter R5, and 20 percent or more of the luminaires within a space are being replaced, the alteration or repair in each case shall comply with the control provisions of the NYCECC, as applicable.
3. When following ASHRAE 90.1, and more than 10 percent of the connected load within a space or area is being replaced, the alteration or repair in each case shall comply with the controls provisions of ASHRAE 90.1, as applicable.

E. Trade-offs. Lighting additions, alterations, and repairs within the scope of work shall be permitted to utilize trade-offs provided the total interior lighting power allowance of all the areas illuminated by the scope of work, in accordance with the NYCECC or ASHRAE 90.1, as applicable, is not exceeded.*Exceptions*

1. If the applicant can demonstrate through a whole-building energy modeling analysis that the building, including the proposed scope of work, complies with the NYCECC, then lighting may be used to trade-off with other elements of the energy analysis.
2. In cases where the existing lighting power density within the area of the scope of work is less than the lighting power density allowed by the NYCECC because of a previous trade-off with less efficient lighting in other areas of the building, and/or less efficient envelope, HVAC or service water heating systems, the proposed total installed lighting power of the area illuminated by the scope of work shall not exceed the existing total installed lighting power notwithstanding the lighting power density as determined by the requirements of the NYCECC.

III. EXTERIOR LIGHTING SYSTEMS

Alteration of exterior lighting systems and/or replacement of exterior lighting fixtures, lamps, ballasts and/or controls, shall comply with the provisions of section NYCECC C405.2.6 and C405.4 or ASHRAE 90.1 sections 9.4.1.4 and/or 9.4.2, as applicable, to the area illuminated by that lighting system and the applicable controls requirements of the alteration.

IV. ELECTRICAL OR CONTROL EQUIPMENT

Electrical or control equipment regulated by the NYCECC or ASHRAE 90.1, as applicable, shall be altered, renovated or repaired as follows:

- A. Equipment Replacement.** Existing electrical or control equipment shall be replaced with equipment that complies with sizing and performance requirements of the NYCECC or ASHRAE 90.1, as applicable, for new equipment.
- B. Equipment alteration or repair for a different function.** Existing electrical or control equipment that is altered to perform a different function that is regulated by the NYCECC shall comply with sizing and performance requirements of the NYCECC or ASHRAE 90.1, as applicable, for new equipment for such function.
- C. Equipment repair for the same function.** Existing electrical or control equipment that is repaired to continue its operation in the same function shall not be required to comply with sizing or performance requirements for new equipment.

V. VERTICAL AND HORIZONTAL TRANSPORTATION

Alterations to elevator, escalator, or moving walk controls equipment regulated by the NYCECC or ASHRAE 90.1, shall be required to comply with the NYCECC or ASHRAE 90.1, except where there is insufficient space or access to meet the motor, transmission and/or drive requirements, provided the energy use of the building is not increased.

VI. COMMERCIAL KITCHEN EQUIPMENT

Alterations to commercial kitchen equipment regulated by the NYCECC or ASHRAE 90.1, shall be required to comply with the NYCECC or ASHRAE 90.1, except where there is insufficient space or access within the existing building or equipment, provided the energy use of the building is not increased.

RELATED CODE/ZONING

NYCECC 101.2.4	NYCECC Chapter R5	ASHRAE 90.1 Section 10
NYCECC R404	NYCECC Chapter C5	RCNY 5000-01
NYCECC C405	ASHRAE 90.1 Section 8	
NYCECC C406	ASHRAE 90.1 Section 9	