ACEC New York

American Council of Engineering Companies of New York

Comments on proposed amendments to the NYS Energy Code
September 24, 2024

The American Council of Engineering Companies of New York (ACEC New York) is an association representing nearly 300 engineering and affiliate firms with 30,000 employees in New York.

Our members design the mechanical, electrical, energy performance, structural, plumbing, civil, environmental, fire protection and technology systems of buildings and infrastructure for public and private owners statewide.

ACEC New York as an organization has a proud history of providing technical expertise and feedback from the perspective of the licensed professional engineering firms who design buildings, for the state to take into consideration as it amends laws and codes addressing changing needs.

Our Metro Energy Code Committee reviewed the proposed Code changes and submits the following comments, recommendations, and questions (ie. requests for clarifications) regarding the proposed.

Proposed Changes to the Commercial Provisions of the Energy Code:

Chapter 402 Building Envelope:

1. C402.1 Section 1 & Page 51 C402.1.2.1.8- Can a definition be provided to clarify what is included/meant by "penetrations from mechanical equipment?" What types of penetrations from equipment listed in Table 6.8.1-4? Mechanical piping, ductwork, etc? Would electrical conduits, plumbing pipes be included if they serve the piece of equipment? Does this only pertain to above grade wall or would roof penetrations be included as well? The code prescribed pipe insulation and duct insulation values are less than code prescribed opaque wall insulation values, is the intent to take a penalty for all wall penetrations or to increase the insulation provided around ducts/pipes/conduits? If intent is to increase insulation, would the entire duct/pipe run need to be insulated to code minimum wall values or just the portion that comes into contact with the wall penetration?

Chapter 403 Mechanical Systems:

1. Table C403.3.2 (2)- In some instances minimum required SEER is being replaced with SEER2, can clarification/guidance be provided on how to convert SEER2 into COPnf values for energy models built using Chapter 12 Energy Cost Budget Method? Currently EER and SEER are the only input metrics to convert to a COPnf. We recommend including this in the definitions or footnotes.
2. Section C403.4.6 Exception 4: Can a comprehensive list of typical space types be added where demand responsive controls would not be required to avoid having to get project specific approval from the building official? For example Museums are typically B or A-3 occupancy but require precise indoor temperature control.

3. Section C403.5, 3: Economizer requirements for Group R are misaligned with large multifamily residential function. The current language allows for a 270,000 Btu/h individual fan system exception in group R occupancies, 5 times the "all other occupancy" fan system limit, the total capacity limit for group R then sites 20% of building cooling or 1,500,000 Btu/h. The intention of these capacities is misaligned with multifamily buildings, in that the individual fan systems are typically, if not exclusively much smaller than the 270,000 Btu/h for the dwelling units; however, the 20% or 1,500,000 Btu/h total capacity limit is challenging for Residential buildings. There is limited to no benefit of providing mechanical economizer in a residential area with operable windows, and the building wide limits set force any Residential building larger than ~50,000 SF to include economizer for 80% of the space. We recommend lowering the per fan system limit to 54,000 Btu/h and removing the building wide limit for residential / dwelling unit systems specifically. Including a total building limit for systems serving non-dwelling unit areas that is aligned with the 20% or 300,000 Btu/h for all other occupancies.
4. Section C403.7.4.1: Can clarification be provided as to why the non-transient dwelling unit heat recovery/energy recovery requirement is greater than ASHRAE's requirement and the requirement for all other space types?
5. Section C403.10.1: The minimum boiler system efficiency listed is much higher than the minimum boiler efficiency listed in Table 403.3.2 (6). We recommend adding a footnote to Table 403.3.2 (6) to reference C403.10.1 for high-capacity systems. It will make this requirement clearer.
6. Section C403.11.6 Exception: Can clarification be provided on what constitutes site-recovered energy? Presumably this refers to recovered heat from building cooling loads and or extracted heat from a geothermal well. Is the requirement based on providing 60% of annual reheat energy or peak reheat energy? We recommend adding a definition for Site-Recovered Energy to make this clearer.

Chapter 404 Service Water Heating:

1. Section C404.4 Exception 3: We recommend removing this exception. Even though the piping serves fluid that is not heated with fossil fuel or electric energy, the heating loss from the piping could have an adverse effect on the cooling loads within the space(s) that it is located.

Chapter 405 Electrical Power and Lighting Systems

1. Section C405.3.2: Can clarification be provided as to why buildings with unfinished spaces shall use the space-by-space method? Other standards require building area method for unfinished spaces. We also recommend providing guidance on which Building Space Type to utilize for unfinished spaces.

Chapter 407 Total Building Performance

1. Total Building Performance savings are based on Energy Cost comparison. Given code direction and the State climate targets, we recommend utilizing site / EUI or Carbon as the comparison metric to properly benefit (and not penalize) efficient electrification and elimination of fossil fuels.
2. Table C407.2 (2): Can clarification be provided as to what electric source energy conversion factor should be used for onsite renewable energy. Would it be considered 1 or 0?
3. Table C407.2(1): Section for the Air Leakage should be referenced to C402.6 not C402.5
4. Table C407.2(1): why are C403.4.3, C403.4.4 and C403.4.5 not included in the Mandatory requirements. Without mandatory requirements on controls it can lead to inefficiencies in operation and control.

Chapter 408 Maintenance and Commissioning

1. Section C408.2.3: We recommend referencing ASHRAE Standard 202 for standard procedures.
2. Section C408.3: We recommend providing clarification that only the receptacles that are integrated with the lighting control should be commissioned. General receptacle or outlets that are not controlled by lighting switches, are excluded.
3. Section C408.3.1.1: This section should include vacancy sensors in addition to occupancy sensors.

Chapter C503 Existing Buildings

1. Section C503.1 and C503.2.2.1: It is unclear if the proposed code will still allow for glass only replacements in an existing sash and frame, as allowed under the current code. We recommend making this clearer.

Proposed Changes to ASHRAE 90.1-2022

1. ECB and Appendix G are still based on Energy Cost comparison. This is problematic for some system types in ECB (ground source which maps to WSHP with Boiler) and many types in Appendix G. Whenever the baseline maps to a fossil fuel system, the baseline often, if not normally, performs better using a cost metric. Given code direction and the State climate targets, we recommend utilizing site / EUI or Carbon as the comparison metric to properly benefit (and not penalize) efficient electrification and elimination of fossil fuels.
2. Exceptions to 5.5.3 Section 3 & Page 6: Exception to Section 5.6.1.1: Can a definition be provided to clarify what is included/meant by "penetrations from mechanical equipment?" What types of penetrations from equipment listed in Table 6.8.1-4? Mechanical piping, ductwork, etc? Would electrical conduits, plumbing pipes be included if they serve the piece of equipment? Does this only pertain to above grade wall or would roof penetrations be included as well? The code prescribed pipe insulation and duct insulation values are less than code prescribed opaque wall insulation values, is the intent to take a penalty for all wall penetrations or to increase the insulation provided around ducts/pipes/conduits? If intent is to increase insulation, would the entire duct/pipe run need to be insulated to code minimum wall values or just the portion that comes into contact with the wall penetration?
3. Section 5.6.1.1: Can more clarity be provided by what is meant by "provided it is similar to an assembly being modeled?" Is there a quantifiable closeness in U-value that can be added to this section to provide clarity on when not to include a small assembly type?
4. Table 6.8.1-1: In some instances, minimum required EER is being replaced with IEER, can clarification/guidance be provided on how to convert IEER into COPnf values for energy models built using Chapter 12 Energy Cost Budget Method? Currently EER and SEER are the only input metrics to convert to a COPnf.
5. Table 6.8.1-2: Can a definition/clarification be provided on how to distinguish between air-cooled and "space-constrained" air cooled?
6. Table 6.8.1-6: It appears that efficiency requirements for boilers <300 MBH are being removed without being replaced by a minimum efficiency requirement, what would the minimum requirement be for boilers <300 MBH?
7. Section 6.9: Can it be clarified if the electric resistance space heating limitation is 2 kW per dwelling unit or 2 kW in total per building?

8. Section 6.9: Can it be clarified if there are any restrictions on electric resistance heating in unoccupied areas that aren't unoccupied tenant spaces? (Eg. Mechanical equipment rooms, stairwells, corridors)

Proposed Amendment to 19 NYCRR Part 1240 – Fossil-fuel equipment and building systems

1. 1240.7 (d)(1): It is understood that the State's Energy Law is explicit that the fossil fuel regulations shall not apply to buildings existing prior to the effective date of the prohibition. However, the proposed code language does not make this clear. We recommend clearly articulating in the code that it does not prohibit any work associated with fossil fuel systems that were legally installed in buildings prior to the effective dates within the law
2. 1240.7 (e)(1)(iv): The rule includes "other medical facilities" (which includes physician's offices, and dispensaries) on the list of building uses eligible for "exemption" rather than "conditional exemption". This appears too broad and we recommend that "other medical facilities" be moved to the list of occupancies eligible for "conditional exemption".
3. 1240.7 (e)(2)(ii): The rule allows a conditional exemption related to process loads, but does not exempt any building loads which includes "water heating" systems. There is no indication whether "water heating" would include all service hot water heating loads which typically refer to "domestic" and "process" water heating loads. We recommend clarifying whether "water heating" includes process water heating loads which may be significant for many of the conditionally exempt building uses (e.g., commercial food establishment, laundromat, manufacturing).
4. 1240.7 (e)(2)(iii): The threshold for qualifying for a "grid reliability exemption" doesn't seem very onerous if one were to receive a rejection for additional capacity associated with an all electric resistance based electrification plan. Consider requiring that the facilities request should be based on increased capacity associated with a heat pump based electrification plan not electric resistance.

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