

**INTERPRETATION IC 90.1-2019-15 OF  
ANSI/ASHRAE/IES STANDARD 90.1-2019  
Energy Standard for Buildings Except Low-Rise Residential Buildings**

**Date Approved:** January 30, 2024

**Request from:** Christina LaPerle, Karpman Consulting LLC, 15 Hillside Ave., Monroe, NY 10950.

**Reference:** This request for interpretation refers to the requirements presented in ANSI/ASHRAE/IES Standard 90.1-2019, Section G3.1.2.6 Exception 2, regarding determining if the proposed design includes an economizer.

**Background:** Section G3.1.2.6 states that, “*Air economizers* shall not be included in baseline *HVAC Systems* 1, 2, 9, and 10. Integrated *air economizer* control shall be included in baseline *HVAC Systems* 3 through 8, and 11, 12, and 13 based on climate as specified in Table G3.1.2.6”

With Exception 2 stating, “Where the use of *outdoor air* for cooling will affect supermarket open refrigerated case-work *systems*. This exception shall only be used if the system in the proposed design does not use an economizer. If the exception is used, an economizer shall not be included in the *baseline building design*.”

It is not clear how to determine whether economizer should be modeled in the baseline system if it is a multizone system serving a mixture of zones, some of which have open refrigerated case-work systems and are served by proposed systems with the economizer and some served by the proposed systems without economizer.

**Interpretation No.1:** If at least one zone served by the baseline HVAC system is served by an HVAC system with an air-side economizer in the proposed design, the baseline system serving this zone will also be expected to have an economizer even if other zones that it serves do not.

**Question No.1:** Is this interpretation correct?

**Answer No.1:** No

**Comments:** The baseline multizone system will be governed by the zone which includes a specific indoor environment criterion – refrigerated case-work. The proposed design does not include air economizers due to the indoor environment criteria of the zone. As a result, when this zone is mapped to a combined VAV system, the zone with the case-work triggers the exception for all zones on the VAV. The baseline HVAC system in this case is inherently inefficient since it serves two distinct indoor environmental criteria. We think this is a situation that will rarely occur, since the zone with refrigerated case-work is likely to be required to have a separate system in the baseline in accordance with section G3.1.1 b and c, which specifies when separate HVAC systems should be assigned in the baseline building due to significant differences in loads or schedules.

**Interpretation No.2:** If less than 50% of the total cooling capacity associated with the zones served by the baseline HVAC system in the proposed is associated with an air-side economizer then the proposed is considered to not have an economizer.

**Question No.2:** Is this interpretation correct?

**Answer No.2:** No

**Comments:** See answer to Interpretation 1.