

Miss Schmeltz:

Once again, thank you for the opportunity to comment on the proposed HVAC specification. We were pleased to see that many of our suggestion related to the Options Document were incorporated into the Draft Eligibility Criteria. Colorado Springs Utilities would like to suggest that the equipment sizing procedures be re-worded to say the following:

"Equipment sized according to the procedures outlined in ACCA Manual J® (or equivalent), latest edition, shortcut calculations not allowed, using the 2% Cooling Design Weather Data from ASHRAE Fundamentals Handbook, with rated cooling capacity not more than the calculated maximum cooling load values. Calculations must be submitted to confirm the cooling equipment is not oversized."

See this link for one study showing that Manual J over-states cooling loads by up to half. 'Using 2/3 of what Manual J produces is probably OK'. <http://oikos.com/esb/50/manualj.html>

ACCA Manual J has been around for a long time. It is not the current state of the art. It used two-dimensional heat transfer methods, did not consider well time lags or diversities, and so overestimated the real loads. The one page short-cut forms of Manual J should definately be discouraged. Manual J has found success in that it produces a system selection that is "large enough"... but this is often too large, and that is an issue for utilities. In the IEC-2003 (Colorado Springs' energy code) for residential sizing - section 503.3.1 - ASHRAE Fundamentals Handbook is listed as the preferred standard for load calculations. Heating calculations are not our biggest concern - but oversized A/C units will impact our infrastructure from demand so we don't want oversized units. Contractors tend to like Manual J because it's easy and quick, but we want to protect customers and our peak load growth from potential oversizing of AC systems. The truth is that the unit that is "just barely big enough" is the one to have, so sizing carefully is the key to controlling excess demand. A cooling unit that is a bit undersized is usually fine, except it may slip a degree or two on the very hottest hours of the day.

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