

Interpretation IC 90.1-1989-16 - Original: June 28, 1993; Revised: October 6, 1993
ASHRAE/IES Standard 90.1-1989, *Energy Efficient Design of New Buildings Except Low-Rise Residential Buildings*

Request from: This reissued interpretation incorporates a change in the answer to Question 1 and the addition of a referenced computer program in the first line of the Comment to Question No. 1. This revised interpretation is intended to resolve comments received as a result of publication of the original interpretation in the September, 1993 issue of the ASHRAE Journal. The comments were received from Mr. Ross F. Meriwether, 3315 Outrider, San Antonio, TX 78247-4405. The original request for interpretation was received from Mr. Lawrence G. Spielvogel, 203 Hughes Road, King of Prussia, PA 19406-3785.

Reference: This request refers to ASHRAE/IES 90.1-1989, Subsection 13.8, "The Simulation Tool."

Background: In Subsection 13.8, the first paragraph reads in part:

"13.8 The Simulation Tool. Annual energy consumption should be simulated with a multizone, 8760 h per year building energy program. The tool should account for: ...

(e) energy consumption information at a level necessary to determine the ECB and DECOS via the appropriate utility rate schedules."

The last sentence of the third paragraph reads:

"In addition, the methods used shall be capable of translating the DECON into energy cost using actual utility rate schedules against, for example, the coincidental electric demand of a building."

The last sentence of the fourth paragraph reads:

"Examples of programs capable of handling such complex building systems and energy cost translations that are in the public domain are, in the United States, DOE 2.0 and BLAST 3.0, and in Canada, Energy Systems Analysis Series."

Mr. Spielvogel's letter states in part:

"I have tried to use the computer programs named (in 13.8), as well as others, to perform the required calculations using my local utility rates. None of these programs are able to properly calculate energy cost using the rates from one of the largest utility companies in the country."

Question 1: Are any of the three example programs named in the fourth paragraph of 13.8 capable of being used to calculate building energy cost on a wide variety of utility rate types?

Answer 1: Yes

Comment: Among the example programs named, DOE-2 and the Energy Systems Analysis Series (ESAS) are currently able to calculate energy cost on a wide variety of utility rate types. The BLAST group includes the BLAST 3.0 and Life Cycle Cost in Design (LCCID) programs. BLAST 3.0 generates an energy file; LCCID uses this file to calculate energy costs for a wide variety of non-time-of-use utility rate structures. The Army Corps of Engineers plans to implement time-of-use rate structures in the next major release of LCCID.

SSPC 90.1 will consider clarifying the text of 13.8 for the next revision.

Question 2: The last sentence of the third paragraph uses the word "methods." Does "methods" mean that the standard requires use of an energy simulation program to calculate energy costs?

Answer 2: No

Comment: Hand or computer spreadsheet calculation of energy costs is acceptable as long as the utility rates are correctly calculated.

SSPC 90.1 will consider clarifying the text of 13.8 for the next revision.

Question 3: Is it possible to perform the calculations required by 13.8(e) using the utility rate structure in Mr. Spielvogel's home area?

Answer 3: Yes

Comment: Subsection 13.8(e) states that "the simulation tool should account for ... (e) energy consumption information at a level necessary to determine the ECB and DECOS via the appropriate rate schedules. For non-typical utility rate schedules (that cannot be handled by current energy simulation programs), it may be necessary to perform the calculations by hand or computer spreadsheet.