



ENERGY SYSTEMS LABORATORY

Texas Engineering Experiment Station
Texas A&M University System

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College Station, Texas 77843-3581

December 21, 2001

Mr. John Promise
Director, Environmental Resources
North Central Texas Council of Governments
P.O. Box 5888
Arlington, TX 76005-5888

Re: NCTCOG Regional Amendments to IRC/IECC

Dear Mr. Promise:

Thank you for your letter of October 11, 2001 requesting that the NCTCOG's recommended regional amendments to the 2000 International Energy Conservation Code and to Chapter 11 of the 2000 International residential Code be reviewed by the Energy Systems Laboratory pursuant to provisions of Senate Bill 5, 77th Texas Legislature (R.S.).

Several items in your recommended amendments will require detailed simulation before we will be able to issue a definitive determination of their impact. We have made progress toward developing a standard tool for these simulations, but anticipate that the process will take several months at least. It has been decided therefore to conditionally approve the NCTCOG amendments package with exceptions noted, and reserving judgment on the items requiring simulation. This means that, with minor modifications as noted, the proposed amendments should result in substantially equivalent energy efficiency results as the unamended codes. If it is determined on completion of our simulations that further minor modifications are needed in order to ensure that amendments do not result in less stringency, we will recommend specific limits at that time.

Items requiring simulation before a final determination of impact include:

IECC

101.3 -- The laboratory will separately review voluntary performance testing programs to determine whether they meet or exceed the IECC requirements.

302.1 -- Respecting the intent that the overall impact of standardizing the regional requirements (combining zones 5 and 6 into a single zone) be at or above results of the IECC, and recognizing that uniform standards will generally improve compliance

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by reducing confusion, the laboratory will review whether the impact of increased stringency for zone 5 will exceed the relaxation of the window U-factor for zone 6.

502.1.5 -- The laboratory will review the shading options to determine whether they are equivalent in impact to an average Solar Heat Gain Coefficient of .4 or less for all fenestration products.

502.2 -- The laboratory will review Table 502.2 values to determine whether the standardized values are at least equivalent in impact, overall, to the range of values in the nomographs in this section.

502.2.4 -- The laboratory will review whether the generally increased stringency of prescriptions for zone 5 will exceed limited applications of relaxed window U-factor for zone 6 (up to 12% glazing area).

IRC

N1101.2.1 -- The laboratory will review the proposed air conditioner efficiency trade-offs to determine if these will sufficiently offset the higher levels of glazing as was suggested by MECcheck.

N1102.1 -- The laboratory will review proposed Table N1102.1 to determine additional limitations that may be needed to maintain the code's stringency. For now, we recommend limiting the application of this prescriptive table to projects where the cathedral ceiling area is limited to one third or less of the total ceiling area.

We expect that after simulations have been completed, laboratory determinations on these sections will be positive or that any adjustments needed will be minor.

Exceptions taken include the following:

502.1.1 -- The exception to the requirement for a vapor barrier should be limited to your region, instead of extending to zone 9.

502.2 note g -- The recommendation of equipment inside conditioned space should include "equipment and ductwork." This is not a requirement.

Chapter 9 -- ASHRAE Standard 62-1989 has been replaced by 62-1999 (Ventilation for Acceptable Indoor Air Quality), and this reference should be updated along with 90.1.1999.

Sincerely,



Tom Fitzpatrick
Energy/Codes Specialist

cc: Pat Baugh, Chairman-RCCC; Russ Mower, Chairman-BECAB; Kenny Calhoun, NCTCOG; Bahman Yazdani, ESL; File: SB5/IECC Amendments/NCTCOG