and the Department solicits comments on the appropriate basis on which that exception might be made (number of homes with demonstrated tightness, etc.).

Subpart C—How to Administer a Home Energy Rating System

Proposed Section 437.200: Energy Analysis Tool Requirements

Proposed § 437.200 establishes the minimum capabilities that an energy analysis tool must have in order to produce the information used in determining a rating. These include the ability to consider the effect of the following items when estimating energy use:

Building types. (Proposed § 437.2);

Reference home configuration. (Proposed § 437.103);

Minimum rated features. (Proposed § 437.104);

Operating condition assumptions. (Proposed § 437.105);

Non rated energy consuming devices. (Proposed § 437.106).

Proposed paragraph (a)(5) is provided in response to section 271(b)(2) of the Act which requires that the voluntary guidelines include protocols and procedures for certification of the technical accuracy of building energy analysis tools used to determine energy efficiency ratings.

The National Renewable Energy Laboratory (NREL) has developed a Home Energy Rating System Building Energy Simulation Test (HERS BESTEST) for this purpose. HERS–BESTEST is published as a technical report identified as NREL/TP–472–7332, and is available from the information contact identified at the beginning of this notice or from the National Technical Information Service, U. S. Department of Commerce, Springfield, Virginia 22161.

In developing HERS BESTEST, NREL used the results of three public domain dynamic analysis programs with time steps of one hour or less to establish reference energy consumption values as a basis for comparison of the energy consumption calculations generated by HERS tools. The programs used were DOE 2.1E, BLAST 3.0, and SERI–RES.

The NREL report establishes the procedures to administer HERS–BESTEST. The NREL report also provides suggested pass/fail criteria for certification of a rating tool based on the tools ability to correctly calculate, within an allowable deviation, building energy loads for a series of tests identified as Test Suite 1 of the HERS–BESTEST process.

A single story slab on grade house with typical glazing and insulation is used as a base case with the HERS–BESTEST Tier 1 test suite consisting of variations to the building in these elements:

- Air leakage.
- Wall and ceiling R-value.
- Glazing area.
- Glazing physical properties.
- Glazing orientation.
- South overhang.
- Uninsulated slab.
- Insulated slab.
- Uninsulated basement.
- Insulated basement.
- Internal loads.
- Crawl space.
- Exterior surface color.
- Combination of features using the least energy efficient specifications for each.

In each of the variations listed above, the energy loads calculated by the three public domain dynamic analysis programs differ by varying amounts. The variation can be up to fifteen percent of the mean of all three results. Thus a ''band width'' of results is created for each test case.

Proposed § 437.206 (Accreditation) provides that it is the responsibility of a State or any other organization established as an accrediting body, to establish the pass/fail criteria for certification of the tool. The suggested pass/fail criteria provided in the NREL report are based on the widest interval produced by either a deviation of four million BTU outside, on either side of the ''band width'' created in HERS–BESTEST or an interval produced by the 90% confidence interval for the population mean using a Students t distribution based on the reference results of HERS–BESTEST.

Proposed paragraph (b) of this section provides for future energy analysis tool requirements. The Department believes that the accuracy of ratings will be improved with tools that utilize hourly simulations to handle the variables provided for in this proposed paragraph. Proposed paragraph (b) of this section sets a period of four years from the date of final rulemaking for HERS providers to improve their tools to meet the requirements of this part.

The Department invites comments on the need for the degree of accuracy expected to result from the HERS–BESTEST procedure. Specific questions are: Can accuracy be best determined using empirical data that compares predictions to actual consumptions? Also, should HERS providers be able to self-certify the accuracy of the energy analysis tools?

Proposed Section 437.201: Site Data Collection Manual

Proposed § 437.100 states that data is to be collected at the site of the rated home. Proposed § 437.201 would require each HERS provider to supply each data collector with a manual containing approved data collection procedures. Proposed paragraph (a) of this section provides, as a reference source for such procedures, Guideline No. 10 of the Home Energy Rating Systems Council HERS Guidelines. The Department has placed a copy of this guideline in the public file for this notice.

The Department believes that a manual of this type can be most useful if it is directed to local building practice and history. Therefore, proposed paragraph (a) states that a HERS provider may use procedures established by the accrediting body or may create its own material as long as the procedures used are approved by the accrediting body.

Proposed Section 437.202: Training Home Energy Raters

Proposed § 437.202 would require each HERS provider to provide training to any employee who will be involved in the rating process. This section provides for the development of a syllabus to be used in this training.

Proposed paragraph (a) of this section identifies the subject matter for a classroom training segment of the training. Proposed paragraph (b) would require a written examination. Paragraph (c) would require field training. Paragraph (d) specifies a probationary period.

Proposed paragraph (e) provides for the use of a challenge test of competency for rater personnel with prior experience. The challenge test, if passed, would allow the HERS provider to waive the classroom training required by paragraph (a) of this proposed section.

The classroom training agenda in proposed paragraph (a) was developed from information provided to the Department by the HERS Council Technical Committee and is based on recommendations made by personnel representing the following organizations: California Home Energy Efficiency Rating System (CHEERS), Energy Rated Homes of America (ERHA), Oregon Department of Energy, Policy & Planning Division, Western Massachusetts Electric Co. Energy Crafted Home Program.

The Department considers these organizations to be among the most experienced HERS providers operating