Committee considered several existing rating methods. Many of the existing methods considered utilize a 100-point scale, and therefore, a large portion of consumers and financial institutions should find this type of scale an appropriate basis for ratings.

Many of the existing 100-point methods, however, lack consistency in the specification of the extremes of the scale (0 and 100 points). In some of the existing methods, the least efficient fuel and type of heating system is used to define the least efficient end of the scale. In other existing methods, the best available technology is used to define the most efficient end of the scale. The exact parameters that determine the "least efficient" and "most efficient" ends of the scale are selected individually by each HERS provider which can result in a lack of consistency among providers.

To promote consistency, the proposed scale utilizes a single fixed reference point from which energy efficiency is measured. The reference point is fixed at 80 points, and the proposed method assumes zero purchased energy at the top end of the 100-point scale. The top of the scale (100) represents a one hundred percent improvement over the reference point. Therefore, each point above 80 represents a five percent reduction in energy consumption from the reference point. Conversely, at a five percent increase in consumption per point, zero would represent purchased energy that is five (or more) times greater than the purchased energy consumed at the reference point. By selecting the energy efficiency of a hypothetical building (reference house) that remains constant as the reference point, the rating scale becomes both uniform and consistent over time. If no changes occur to the rated features of a home, then the rating also remains consistent over time.

1. Reference House

The approach used to create the specifications for the reference home was to base the proposed scale specifications on an already recognized standard for "energy efficiency." Two recognized standards for energy efficiency that are national in scope are the Council of American Building Officials (CABO), Model Energy Code (CABO–MEC) and the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standard 90.2.

The HERS Council Technical Committee compared the specifications of these two documents. Using computer programs that met the preliminary requirements of the proposed tool certification process found in proposed section 437.200, a comparison was made of calculated energy consumption for two standard prototype homes located in seven cities in the United States. The predicted energy consumption was similar for either standard in most climates. In predominantly heating climates, CABO was slightly more stringent, whereas ASHRAE tended to be slightly more stringent in climates where cooling was the greater need. The difference was not considered to be substantial.

The HERS Technical Committee recommended the use of CABO–MEC as the basis for the reference home in the proposed rating method. CABO–MEC is the qualifying threshold for the energy efficient mortgage program of the Federal National Mortgage Association (Fannie Mae), and the Federal Housing Administration. Further, Section 101 of the Energy Policy Act of 1992 uses CABO–MEC as the benchmark for residential buildings in the Department's Building Energy Efficiency Standards Program.

On the basis of the foregoing, the Department accepts the HERS Technical Committee's recommendations to use CABO–MEC. (See proposed section 437.102, "Section Description of the Guidelines", "Configuration of the Reference Home.")

As previously stated, several secondary mortgage programs, including HUD insured mortgages, recognize CABO-MEC as providing a level of energy efficiency that qualifies buyer for increases in their debt to income ratio limits. These programs currently reference the 1992 edition of CABO-MEC. The Department selected the 1993 edition to establish insulation levels for the reference home because it provides for more realistic (higher) levels of efficiency in multi-family homes than those provided in the 1992 edition. In addition, some elements to define a reference home and a standard set of operating conditions are not present in the 1992 or 1993 editions of CABO-MEC, so they are taken from the 1994 Amendments. Details are provided in Section II.B. "Sections Descriptions" under proposed section 437.103, "Configuration of the reference home" and proposed section 437.105, "Operating condition assumptions."

2. Star Rating Method

Many of the existing HERS systems provide "star" ratings as a way of summarily representing the point scores. Many of the providers support the concept that a "four star" rating should denote efficiency. The proposed guidelines include the use of a "star" system. Under this system, which uses a "one star" to "five stars-plus" scale, the reference home located at 80 points is awarded four stars.

The divisions of the "star" scale in the proposed rating method were created by the HERS Technical Committee based on a study of calculated energy consumption. The HERS Technical Committee used incremental levels of efficiency to look at the range of performance that might be found in the existing housing stock. (For example, a pre-1940 home with no modifications consumes approximately four times the energy used by a reference home.) The study also looked at logical incremental increases in levels of thermal performance above the levels found in the reference home. To attain those higher levels, the study looked at improved insulation equipment efficiency and the use of renewable energy sources such as passive and active solar. The "star" breakpoints presented in the proposed guidelines have their origins in this analysis by the HERS Technical Committee. Copies of the results of this study are available from the Department information contact listed in the "Addresses" paragraph of this proposed rulemaking. The Department has also placed a copy in its Freedom of Information Reading Room.

Thus, the guidelines proposed today are based on the principle of a reference house and logical incremental changes in energy consumption. The expression of the results is captured in the "star" categories of energy efficiency.

The Department invites comments regarding the potential acceptance of these guidelines by existing home energy rating providers and invites specific comments on the content of the guidelines. Commenters should bear in mind that these guidelines would not in themselves set any "acceptable" level of energy efficiency and that existing programs could use any point or points on the proposed scale for comparisons that encourage efficiency. Commenters are also encouraged to provide specific examples if comparisons to existing programs are offered.

II. Description of the Proposed Rule

A. Summary of the Proposed Voluntary Guidelines

The proposed voluntary guidelines would establish: (1) A uniform national rating method, and protocols and procedures for certification of the technical accuracy of building energy analysis tools used to determine energy efficiency ratings; (2) training of