

Oil equipment shipment data compiled by R. Krajewski (Brookhaven National Laboratory), weighted averages

Proposed Section 437.105: Operating Condition Assumptions

These guidelines are to be used to rate homes and not the occupants of the home. Therefore occupant dependent factors e.g., thermostat set points, are to be disregarded when estimating the energy consumption of the rated and reference homes. Instead, the standard operating conditions provided in proposed § 437.105 are to be assumed.

Proposed paragraph (a) of this section provides standard temperature control setpoints of 68 °F for heating and 78 °F for cooling which are consistent with those found in the 1994 Amendments to CABO-MEC. When programmable offsets are available in the rated home, proposed paragraph (b) of this section specifies assumptions for the periods of offset and the amount of offset (5 °F). These values are based on information obtained from an industry survey conducted by Minneapolis Honeywell that reported typical use of programmable thermostats. The Department considers these schedules and offsets to be conservative and therefore suitable as an operating conditioning assumption when the rated home is so equipped.

Proposed paragraph (c) sets standard values for internal gains from lights, people and equipment to be used when calculating the space conditioning loads and energy consumption. These values are consistent with those found in the 1994 Amendments to CABO-MEC.

Proposed paragraph (d) provides a formula for the determination of domestic hot water usage. This formula for daily usage, (30 gallons + (10 gallons × number of bedrooms)), is consistent with the formulas found in the 1994 Amendments to CABO-MEC and in ASHRAE Standard 90.2 that establish domestic hot water usage.

Proposed paragraph (e) would require the HERS provider to make a determination as to what weather data is to be used when calculating energy usage. The normal source of weather information is to be found in the typical meteorological year (TMY) data published by the National Climatic Center, Asheville, NC. The term "climatologically most representative" is used regarding the choice of location of the TMY data to be used. This is because the Department recognizes the possibility that the closest TMY weather site geographically may not be truly representative of the weather conditions found at the site of the home being rated. This proposed paragraph also

allows interpolation of weather data if the interpolated weather information is consistent among all HERS providers operating within a State and is approved by the accrediting body.

Proposed paragraph (f) provides that operating adjustments to equipment efficiencies are to be made to correct for climate and mis-sizing of equipment. These correction factors may be obtained from recognized sources. The most logical sources of this information are the Air Conditioning and Refrigeration Institute (ARI) or ASHRAE. The requirements of this proposed paragraph would be met if the adjustments are either provided by or approved by the accrediting body and are consistent among all HERS providers operating within a State.

Proposed paragraph (g) would require each HERS provider to use local utility or energy rates when calculating costs for reporting as required in proposed section 437.102. This paragraph also would provide for consistency among HERS providers on the updating of the rate information by requiring each HERS provider operating within a State to update information on the same schedule which is established by the accrediting body.

Proposed Section 437.106: Non-Rated Energy Consuming Devices

The energy consumed by appliances and lights is not included in consumption used to determine the rating. Proposed § 437.106 would establish standard consumption values for energy consuming devices such as appliances and lights since it is necessary to estimate the energy usage of these non-rated devices to comply with proposed § 437.102 (Rating Report). Proposed § 437.102 would require that, in addition to reporting the estimated energy use for heating, cooling and water heating, each HERS provider reports the estimated energy use and cost of all other energy used in the rated home.

The Department recognizes the fact that some appliances, especially refrigerators, may have a wide variance in energy use. There are also dramatic savings available with the use of alternative lighting fixtures. The primary reason behind the decision to neutralize the affect of appliances in the rating process is that the rating should not be based on items that are not a permanent part of the structure. Refrigerators and other appliances can be moved with the occupants or can be replaced with models that are more or less efficient. In the case of lighting, there are opportunities to include permanently wired fixtures in the rating

but it is necessary to know the operating schedule of the lighting to properly identify savings. Therefore the rating would be based on the occupants and not on the house. In addition, the number of permanently wired fixtures in the typical home is limited and, in most cases, represent only a small part of the total energy use.

In proposed § 437.100(d), each HERS provider is encouraged to provide separate information on the cost of operating appliances.

The electric energy use values proposed in Table 8 of this section are taken from documents published by the Electric Power Research Institute (EPRI). Those documents include: EPRI Residential End-Use Energy Consumption: A Survey of Conditional Demand Estimates 1989 and EPRI Residential Energy Usage Comparison Project: An Overview 1990.

The gas energy use values proposed in this section are taken from documents published by the Gas Research Institute (GRI). Those documents are: GRI Baseline Projection Data Book, 1994 Edition; and GRI Interim Technical Input to NAECA Rulemaking for Gas-Fired Ranges, 1993.

Proposed Section 437.107 Projected Ratings for To-Be-Built Homes

This section recognizes that homebuilders may wish to offer standard models that may be built on sites that vary in orientation. This would prevent a rater from meeting a provision of section 437.104 which lists window and skylight orientation as a minimum rated feature. Therefore, a projected rating for to-be-built homes may be based on plans by estimating the energy consumption for each of the four cardinal orientations, (north, south, east and west), and basing the projected rating on the orientation that results in the greatest energy consumption.

Projected ratings for to-be-built homes must also use a default value for air leakage of no less than 0.67 air changes per hour. The rating may be revised upon completion of the home if diagnostic testing results in a lower air leakage rate (and/or on the basis of actual orientation). The Department recognizes that this may be unfair to builders who consistently deliver homes with tighter construction because the projected rating will not reflect the benefit of additional investment in tightening of the home and may cause the rating to fall short of a level required to obtain a particular incentive. The final rulemaking could address this issue by allowing an exception to the default value for demonstrated consistency of tightness by a builder