

C A L I F O R N I A   E N E R G Y   C O M M I S S I O N

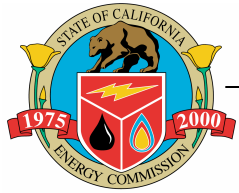
# Title 24 HERS Rater Field Verification

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2003 RESNET Conference

February 24, 2003

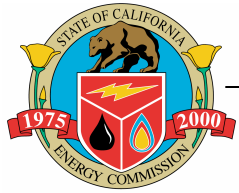




## What Do You Need to Know About Title 24?

- Title 24, Part 6, CA Code of Regulations
- Residential and Nonresidential Buildings
- New Buildings, Additions, Alterations
- Performance Standards Emphasis
- First in effect in 1978; periodically updated
- 16 Climate Zones
- 550 Local Building Departments





## Why Field Verification?

- 1995 Field Research - Massive Duct Leaks; Ducts in Attics; Peak Demand Problem
- Must focus the Standards on the quality of installation
- Other problems -
  - Air Conditioner Installation
  - Lack of Duct Design
  - Insulation Installation
  - Air Barrier Installation

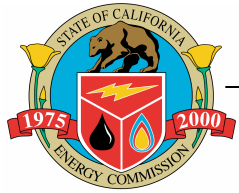




## Why HERS Raters?

- Field Verification requires diagnostic tools, qualified people, adequate time to verify
- Beyond the capabilities, resources and priorities of local building departments
- Can't rely solely on installers, third party required
- State legislation gives Commission authority to oversee HERS raters

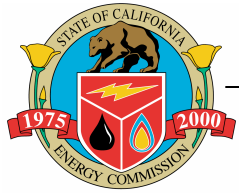




## Why Not Just Require HERS Ratings?

- Commission originally proposed HERS ratings as a compliance option
- Demonstrated Problem is with inadequate installation of certain components
- Performance Standards infrastructure exists with energy consultants doing simulations
- Local Building Departments capable of checking for the presence of measures

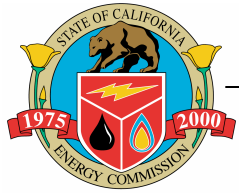




## What does the HERS Rater do?

- Serves as a Special Inspector
- Completes diagnostic testing and field verification using Commission protocols for specific components and equipment
- Builder can choose to have field verification for 100% of the houses or use sampling
- Specific rules for sampling, resampling, and corrective action if necessary

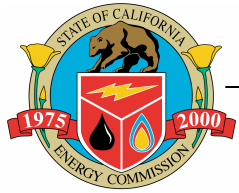




## How Does Sampling Work?

- Installer Tests and Certifies Own Work
- Builder chooses 100% or Sampling
- Initial Testing of first house of every model
- Rater chooses 1 in 7
- If sampled house passes, all 7 pass
- If failure, resample 1 more
- If 2nd failure, test all 7 and correct

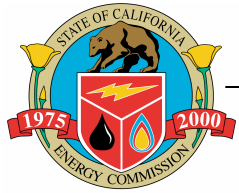




## How Has HERS Rater Field Verification Evolved?

- 1998 - Compliance Options for Duct Improvement - Sealing, Location, Surface Area, Design, Ducts in Conditioned Space; Building Envelope Sealing
- 2001 - Duct Sealing Required; Compliance options for A/C refrigerant charge and airflow; Duct Sealing in Commercial Buildings with Package HVAC

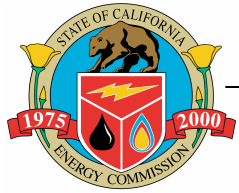




## What's Coming for 2005 Standards?

- Residential New - Compliance options for High Quality Insulation and Air Barrier Installation, High EER A/C, A/C fan energy, Ducts Buried in Ceiling Insulation
- Residential Alterations - Required Duct Sealing for new ducts or new A/C indoor coil or Furnace
- Commercial New and Alterations - Package HVAC, New Ducts or New A/C - Required Duct Sealing





<http://www.energy.ca.gov>

- Title 24 Building Standards
  - Residential Manual
    - Chapter 4, Compliance Through Quality Construction
  - Training Videos
  - Home Energy Rating Systems
  - Quality Homes
  - 2005 Standards Update

