INTRODUCTION
BayREN Codes & Standards Trainings

- BayREN Codes & Standards is a joint effort of Bay Area cities and counties to achieve full compliance with provisions of the California Energy Code.
- BayREN trainings seek to provide building department staff and private sector building professionals with tools and strategies for improving energy code compliance.

Today’s Learning Objectives

- Understand how the 2016 version of the Energy Codes (Title-24, Part 6) affects Bay Area building departments.
  - Permit Application
  - Plan Check
  - Field Inspection
Residential Changes

Compliance Process Flow Diagram

Refer to full-size copy provided with your handouts.
Notice that the forms (CF1R, CF2R, and CF3R) follow a simple 1-2-3 flow.

Notice that process is divided into Plan Check and Field Inspection sections and that good communication must flow between them.

The forms are intended to facilitate this.
Compliance Process Flow Diagram

If a project requires HERS verification, all forms will be registered.
Compliance Documents List

Refer to full-size copy provided with your handouts.

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### Residential Changes

- The basic process does not change.
- Most of the changes occur in the prescriptive requirements for new construction.
- The vast majority of new homes comply using the performance approach.
- The prescriptive measures are mainly the features of the standard house that the proposed house is being compared to.
- The proposed house will be more efficient than 2013 but the exact features will still vary from house to house.
- CF1R-PRF-01 will show required features, as before.

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<table>
<thead>
<tr>
<th>Compliance Documents (Forms)</th>
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<tbody>
<tr>
<td>CDR - Completion of Construction and Certification forms (or equivalent)</td>
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<tr>
<td>CDR - Certificate of Completion (or equivalent)</td>
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<tr>
<td>CDR - Request for Certification (or equivalent)</td>
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For more information, please visit the BAY Area Regional Energy Network website.
Residential Changes

The features in the standard house are more efficient.

The features in the proposed house will have to result in similar (reduced) overall energy use.

- Changes to mandatory measures will require a change in what field inspectors are looking for.
  - Solar ready zone exceptions revised.
    - More alternatives. Will be documented on forms.
    - Only applies to subdivisions of 10 or more.
  - Minimum ceiling insulation now R-22 (was R-30!)
    - This is the absolute minimum and is usually exceeded by prescriptive and performance requirements.
Residential Changes

- Allowed duct leakage for new systems dropped from 6% to 5% of system fan flow.
  - Verified by HERS raters.
- AC and heatpump systems must have liquid line filter dryers installed per manufacturer’s instructions.
  - A new widget to check for.

Residential Changes

- Storage water heaters no longer need external blankets in any efficiency range.
  - One LESS thing to inspect for.
- Instantaneous water heaters must have isolation valves.
  - One MORE thing to inspect for.
Residential Changes

- All luminaires must be high efficacy.
  - This is an **overall simplification** of what needs to be inspected.
  - No more 50% in kitchen, etc., etc.
  - Screw based fixtures (not in a recessed can light) can now qualify as long as they have a high efficacy lamp (bulb) installed.

Administrative Changes (Residential)

- Delegation of Signature Authority
  - Applies to Certificate of Installation (CF2R) forms only.
  - Installing contractor/builder can designate someone as an authorized representative to sign forms (likely a HERS Rater).
  - Agreement, signatures, etc. will be facilitated by HERS Providers.

- What this means
  - CF2Rs will be signed off more easily.
  - Theoretically, HERS rater will verify before signing off on behalf of installer.
  - Installer is less knowledgeable of what’s being signed on their behalf.
Nonresidential Changes

Nonresidential Energy Code Compliance – The Process

See handout.
Nonresidential Energy Code Compliance – The Process

See handout.
Nonresidential Energy Code Compliance – The Process

See handout.

Nonresidential Changes

- The basic process does not change.
- Most of the changes occur in the prescriptive requirements for new construction.
- The prescriptive approach is far more common than in residential construction, but the required energy features are documented similarly to the performance approach.
Nonresidential Changes

- As with residential, the trick is knowing what should be on the plans (plan check) and what should be installed (field inspection).
- The plan checker will either refer to the same prescriptive tables as before (but with stricter features) or the NRCC forms as before.
- The field inspector will refer to the plans and the same compliance documents as before, primarily the NRCC forms for what is required and the NRCA (Acceptance Test Certificates) for what was installed.

Nonresidential Changes

- There are some new mandatory requirements for new elevators that have not had to be checked before.
  - Lighting watts per square feet
  - Ventilation cfm/square feet
  - Controls for both
- Plan checker needs to make sure these are on the plans.
- Acceptance testing is required. Inspector should ask for NRCA forms.
Nonresidential Changes

- There are some new mandatory requirements for new escalators and moving walkways that have not had to be checked before.
- Plan checker needs to make sure these are on the plans.
- Acceptance testing is required. Inspector should ask for NRCA forms.

Nonresidential Changes

- The requirements for lighting alterations have been simplified.
  - This should reduce some griping by permit applicants.
Resources

- BayREN provides training and tools for building departments to help them prioritize and streamline energy plan check efforts.
  - Training is on a variety of topics. Short 90 min. versions and some have long 4-hour versions.
  - Tools include checklists, permit guides, quick guides, etc.
  - Developing automated E-tools for permit applicants, as well as building department personnel.

Contact information:
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  - codes@bayren.org

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