

Nonresidential Key Topics

2008 California Building Energy Efficiency Standards

*Public Workshop
October 24-25, 2005*

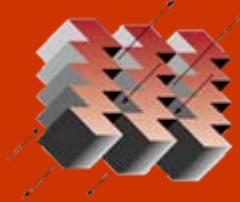


Architectural
Energy
Corporation

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07-BSTD-1
DATE <u>OCT 24 2005</u>
RECD. <u>APR 29 2008</u>



C. Reference Computer Program

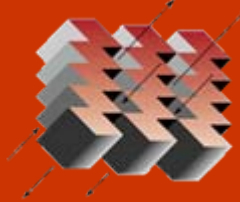


- An evaluation of EnergyPlus has been completed by PG&E
- Gaps have been identified between the capabilities of EnergyPlus and the requirements of the residential and nonresidential ACM manuals.
- Work is continuing, funded by PG&E, PIER and others
- For 2008, the goal is to enable EnergyPlus based compliance tools to meet the ACM requirements

Res and Nonres



E. Ventilation for Indoor Air Quality

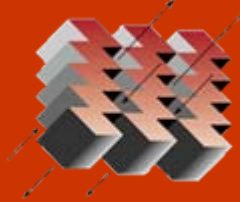


- Residential side is being evaluated by PIER (Wilcox/Sherman)
- Nonresidential side will be researched by the team. Possible reference to the CMC that may incorporate ASHRAE 62.1-2004.

Res and Nonres



F. Nonresidential Ducts



- Possibility of extending the duct sealing requirements to more nonresidential buildings
- Possible requirement or credit for “cool ducts”.
- Large building research by LBNL (Craig Wray).

Nonresidential



G. Federal Requirements for State Building Energy Codes

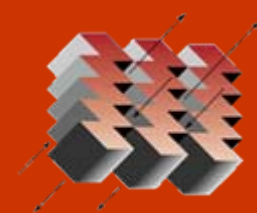


- Research team will mine the good ideas from
- IECC
- ASHRAE 90.1-2004
- Other codes

Res and Nonres



K. Performance Verification/Acceptance Testing

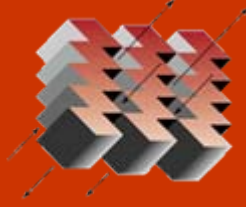


- The items to be tested include VAV systems, constant volume systems, packaged HVAC systems, air distribution systems, hydronic system controls, air economizer controls, demand control ventilation (DCV) systems, variable frequency drive systems, and lighting control systems.
- Certain improvements will be considered including but not limited to calibration of thermostats and flow measurements in hydronic systems.
- Automated fault detection and diagnostic software for air handling units (AHU) and VAV boxes will also be considered.

Nonresidential



P. Nonresidential Lighting Improvements

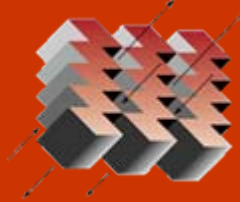


- **Reconsider ceramic metal halide sources for the tailored special lighting allowances instead of incandescent sources.**
- **Revise the lighting standards based on lux rather than foot-candles.**
- **Compare the lighting power densities to ASHRAE 90.1**
- **Place conditions on dimmable ballasts that qualify for the 25% PAF.**
- **Evaluate the LPD impact of energy efficiency improvements in large metal halide lamp/ballast systems**
- **Update the interior lighting requirements with special attention to high end retail and the tailored method (HMG/Bauer)**

Nonresidential



Single Zone VAV



- **Applicable to hotel function rooms, malls, big box retail, etc.**
- **Large size, perhaps 20 tons or more.**

