2015 NASEO Conference
San Diego, CA

Commercial Energy Codes
Innovations, Challenges and Solutions
Energy Codes
3 Categories

- Envelope
- HVAC
- Electrical
Electrical Requirements
2 Sub Categories

💡 Lighting and Controls

💡 Electrical Power Distribution Systems
LIGHTING

- Incandescent lamps are being phased out
- Magnetic ballasts no longer qualify as high efficacy lighting
- Light Emitting Diode (LED) luminaires are in widespread use
- Costs are coming down
- Color rendition vastly improved
Advanced Lighting Controls

- Occupancy Sensors - dual technology
- Dimmers - increased granularity (continuous dimming)
- Automatic Daylighting Controls
- Wireless (retrofits)
- Controlled areas now include outdoors, parking garages
- 3rd Party Commissioning (Title 24)
Electrical Power Distribution Systems

- Service Metering
- Disaggregation (Separation) of Circuits
- Mandatory Voltage Drop requirements
- Controlled Receptacles
- Demand Response
Utility meter meets this requirement if data access is provided to customer
Electromechanical “old-style” meters do not meet this requirement
Marking Examples

One Controlled

Two Controlled
Motor & Transformer Efficiency

❖ Motors account for >40% of energy usage worldwide

❖ NEMA “Premium” motors & transformers

❖ Required to meet stringent energy efficiency standards

❖ New efficiency requirements for manufacture of all transformers on January 1, 2016
CHALLENGES

- Enforcement Mechanism
- Lack of Knowledge/Learning Curve
- Complexity of Systems
- Cost of Construction
- Clarity of Codes/Interpretations
- Resistance to Change
SOLUTIONS (TRAINING)

- Include designers, installers, inspectors
- Low/no cost
- Convenient
- Ongoing
- CALCTP (California Advanced Lighting Controls Training Program)
SOLUTIONS

- Take enforcement seriously
- Time to adjust and learn
- Stakeholder participation
- Culture shift (takes time)
- Costs are decreasing (labor & products)
- 3rd party inspections/commissioning
- Keep It Simple Stupid (KISS)
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