LCF
LIGHTING
CALIFORNIA'S FUTURE

PROJECT 3 Cost-Effective Demand Response (CEDR)

Joel Snook
President
NEV Electronics LLC

October 10, 2007

PUBLIC INTEREST ENERGY RESEARCH
"Research Powers the Future"

Goals

- Make possible economically viable retrofit DR control of commercial lighting
  - Estimates show CEDR is viable in large offices with existing DR programs
  - Secondary targets:
    - industrial and residential
    - plug loads
    - new construction
- Advance CEDR from the laboratory to field testing
- Make compatible with emerging DR signaling methods
  - Programmable Communicating Thermostats, Smart Meters
- Document CEDR costs and market size
  - Field trials will yield real world installation costs
  - Finalize designs and estimate large volume production costs
- Establish manufacturing partners
  - ESCOs and Utilities can help establish a demand for CEDR

Current Activities

- Finishing market analysis and product specification
  - Looking for better estimates of peak lighting load controlled by bi-level switching
  - Working with utilities to establish DR interface requirements
- Developing a field test plan
  - Developing site selection criteria
  - Looking for two demo sites
- Determining applicable standards CEDR must meet
  - THD, NEC, UL, FCC

Planned Demonstrations

- Install and test CEDR in two buildings
  - Install
    - Hire electricians to do the installations
    - Record actual installation costs and problems encountered
  - Test
    - Load-shed reliability
    - Percentage reduction of lighting load during the shed period
    - Power quality measurements
    - Look for adverse interactions with other equipment

Input

- Help estimating market penetration
  - We can use the standard penetration percentage, or try to take into account our payback period if there are formulas available.
- Help with DR incentive program identification
  - Looking for a DR program guru who can help us identify the appropriate DR incentive programs for CEDR at each of the California utilities. A single contact would save us a lot of time.