

FACILITIES
MANAGEMENT
CONFERENCE
2014

BEST PRACTICE AWARD CATEGORY:
PLANT MANAGEMENT INNOVATION

BPA Winning
Campus:

California State University,
San Bernardino

Project Name:

Most Open Valve Strategy
(MOV) Central Plant
Operation

Budget:

\$100,000

Delivery Method:

In-House

Key Contributors:

Phil Westbrook

Tony Simpson

Rod Snodgrass

Campus HVAC Staff

Schedule:

1/1/2013 – 6/30/2014

Key Challenges

1. Training – ability for staff to make changes to the EMS and controls.
2. Use Delta T instead of Delta P – a change to conventional approach with central plant design.
3. Utilize pump efficiencies rather than maximizing flow.

What makes this project a
Best Practice Award Winner?

1. **Innovative:** Use Delta T instead of Delta P and utilize pump efficiencies rather than maximizing flow.
2. **Cost Savings:** \$340,000
3. **Process Improvement:** Controls coupled with efficient central plant operation.
4. **Replicated on Other Campuses: Y/N; Why?** Possibly, depending on central plant, EMS controls, and overall campus building engineering.
5. **Contribution to Success of the Campus: Y/N; Why?** Yes, cost savings as a result of energy use and overall sustainability goals. Additionally, efficient operations leads to less demands on overall equipment lifecycle.

Project Description

California State University, San Bernardino, has designed and implemented a central cooling plant automated controls system logic and standard operational procedure for a most open valve strategy that has notably improved occupant comfort while significantly reducing operational costs. Chilled water surplus is produced and stored during off-peak utility rate schedules, allowing variable speed drive pumps to be run at optimal rates over longer periods for maximum energy efficiencies.

The chilled water supply is then pumped through the campus at optimal flow rates to maximize heat transfer from air handlers with a Delta T consistently exceeding 30 degrees Fahrenheit. All this is managed through an existing automated energy management system (EMS) that utilizes unconventional controls logic that allows conventional equipment to operate more as a self-regulating system.