SN schedules loads for DOE labs

Story and photo by Dave Christy

Not too long ago, no one knew what a scheduling coordinator was; today Western is one. On March 31, 1998, the California Independent System Operator and California Power Exchange began changing the way the electric utility industry, including Western, does business.

In the pre-restructuring "old world," the control area operator (Pacific Gas & Electric Co. in northern California) matched load and resources on a real-time basis, said **Ed Chang**, Sierra Nevada Region project manager. The control area operator also controlled generation, matching load internally.

Under restructuring, the ISO is the control area operator for most California power markets (after merging the three control areas of the California investor-owned utilities) but doesn't own the generation. Scheduling coordinators must find energy resources to meet load a day and hour ahead and submit balanced load and resource schedules to the ISO.

The ISO buys additional energy in a competitive ancillary service market to meet reliability requirements, or sells surplus energy on the imbalance energy market to assure load and resources match on a real-time basis. The ISO only conducts transactions with certified scheduling coordinators or adjacent control area operators.

SN is scheduling coordinator for Eastside Power Authority, made up of three irrigation districts, the Department of Energy National Laboratories in the San Francisco Bay Area and a portion of the power supply needs for the city of Redding.

Meeting customer loads

Western schedules power to meet lab loads using Western power or contracted Pacific Northwest power, and provides power for Eastside through its Western allocation. If the labs and Eastside need supplemental power, Western may purchase it on their behalf under existing contracts.

"With the advent of the ISO, all energy in California has to be scheduled. Customers have asked us if we would provide scheduling services for them, and we're pleased to have the opportunity to meet their needs, as well as work with them to reduce energy costs," said **Jerry Toenyes,** SN regional manager.

Under the arrangement for the DOE labs, the four sites are treated as a single customer, resulting in a lower overall cost to DOE. The DOE Oakland Operations Office had been shifting Western power allocations among the sites and rebilling the labs to lower the costs to the individual labs and DOE overall.

DOE and Eastside will see an additional opportunity for savings. Western is joining the California Power Exchange, which allows Western to purchase power to meet loads for the DOE labs and Eastside when the Power Exchange offers the best price. The costs of any purchases will be passed on to the labs or Eastside. For example, when the market price of off-peak energy from the California Power Exchange is less than the rate from other suppliers, Western dispatchers may substitute the lower-cost energy to save the customers even more.

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Mark White, a public utilities specialist in Folsom, and Mark Clark, DOE electric power services manager in Oakland, discuss the settlement agreement for DOE labs.

"Trying to predict actual energy use by the customers is a real challenge. It's an educated guess. You find out the next day how you did."
—Bruce Justeson

For Redding, Western provides scheduling coordinator service across the ISO-controlled grid for up to 22 MW generated at the San Juan powerplant in the Four Corners region. Redding provides a daily schedule for Western to use in the schedule submitted to the ISO. Through the Modesto/Santa Clara/Redding Joint Powers Agency, Redding owns a portion of the plant's generation.

Two days before a customer will actually use the power, Western develops an hourly schedule for power use, explained **Bruce Justeson,** SN power operations specialist. If the proposed schedule doesn't accurately match supply and load, the ISO will reject it. Under an existing contract, scheduling also is coordinated through PG&E.

Patterns in real time

Telemetry equipment is being installed at DOE labs so Western dispatchers can see changing load patterns in real time. The labs will use the Internet and call in supplemental information needed by Western; for example, when a high-energy physics accelerator at the Stanford Linear Accelerator Center unexpectedly drops 20 MW of load, they will provide a new schedule of how the load will ramp back up.

For Eastside, Western calculates load based on projected water use. "Trying to predict actual energy use by the customers is a real challenge," Justeson said. Eastside's load may change depending on water use by farmers and the water level in the irrigation canals.

"It's an educated guess," Justeson said. In scheduling, as in weather forecasting, "you find out the next day how you did."

(Note: Christy is a public affairs specialist in Folsom.)