

# 'Powering up!

## New substation to serve merchant plants

by Leslie Peterson

**R**eliability hinges on adequate power supplies. And this year, supplies have been short. Powerplants that independently generate electricity and sell it on the wholesale market will play an increasing role in ensuring reliability of the interconnected power grid. Literally dozens are planned or under construction. But it takes more than the flick of a switch to bring these plants on line and interconnect them with the rest of the power grid.

One key step is constructing and commissioning facilities that will provide transmission for the power from these plants.

This summer, work in the Desert Southwest on two new Western substations and two substation additions drew to a close. Griffith, Peacock and the enlarged McConnico substations will serve the new Griffith Energy

Project powerplant located near Kingman, Ariz. A stage addition at Topock Substation will serve the Southpoint Power Plant on the Fort Mojave Indian

Reservation near Laughlin, Nev. The powerplants will be privately owned and operated. Western will own and operate Peacock, Griffith and McConnico substations.

"The complete schedule for constructing and commissioning each facility was extremely tight," noted **David Radosevich**, DSW engineering construction manager. "We would never have been able to accomplish so much in so little time without the dedication of our own folks and our construction contractor folks." The combined work force labored 10-hour days, six days a week, sometimes in temperatures exceeding 115 degrees Fahrenheit.

"Commissioning the substations is a critical phase," explained CPO Electrical Engineering Manager **Ross Clark**. "It's when the field forces make sure everything works."

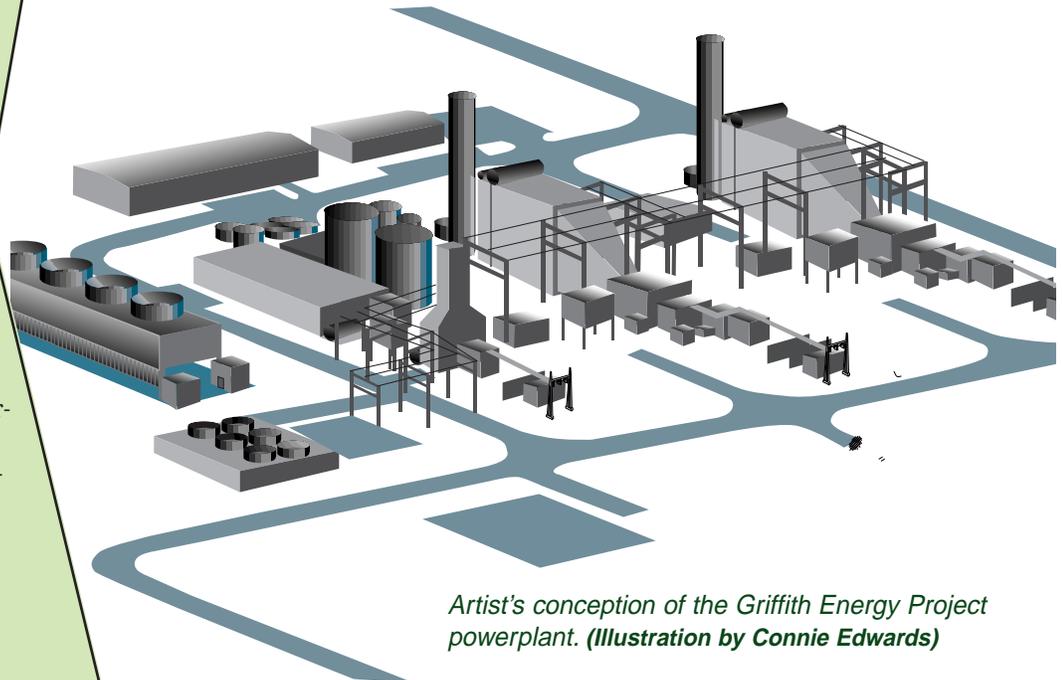
Commissioning a substation is a two-step process. First, field personnel must compare their drawings against what has actually been constructed—circuit by circuit. Next, electricians need to test the circuitry to see if it works. While some of the testing is done "live," DSW will also use

(See **POWER**, next page)

### Griffith Energy Project

The Griffith Energy Project consists of:

- ◆ 520-MW gas-fired combined cycle generating facility
- ◆ 230-kV Griffith Switchyard/Substation
- ◆ 230-kV line bay at McConnico Switchyard
- ◆ 8 miles of 230-kV transmission lines from McConnico to Griffith Substation
- ◆ 30 miles of reconductoring of the Davis-to-Peacock 230-kV transmission lines
- ◆ 230-kV Peacock Substation



Artist's conception of the Griffith Energy Project powerplant. (Illustration by Connie Edwards)

Secondary Injection Modeling Maintenance System, or SIMMS, computer simulations to simulate faults and relay responses (see Aug. 18 *Closed Circuit* article for more details on SIMMS).

“It’s a labor-intensive process,” commented **Brian Kasperek**, DSW lead electrical engineer. “Usually it takes about three to four weeks to commission and energize a substation.”

“In addition to commissioning work, a significant communications design and installation effort takes place for each substation. Digital microwave, RTUs and fiber optic networks are used to carry the hundreds of pieces of information required for dispatch to control those substations and to provide them protection during fault situations,” added DSW Protection and Communication Maintenance Manager **Bill Bailey**.

When fully commissioned and turned over to DSW Operations, the unmanned substations will deliver the power needed to power up the two merchant plants. If all goes well, both merchant plants should come on-line in Spring 2001.

(Note: Peterson is a public affairs specialist at CSO.)

**Southpoint  
Power Plant Project**

The Southpoint Power Plant Project includes:

- ◆ 500-MW gas-fired combined generating facility
- ◆ 7 miles of 230-kV transmission lines (double circuit) from Southpoint Power Plant to Topock Substation
- ◆◆ 50 miles of reconducted 230-kV transmission lines from Topock Substation to Parker Dam.