

# Electric Power <sup>News</sup>

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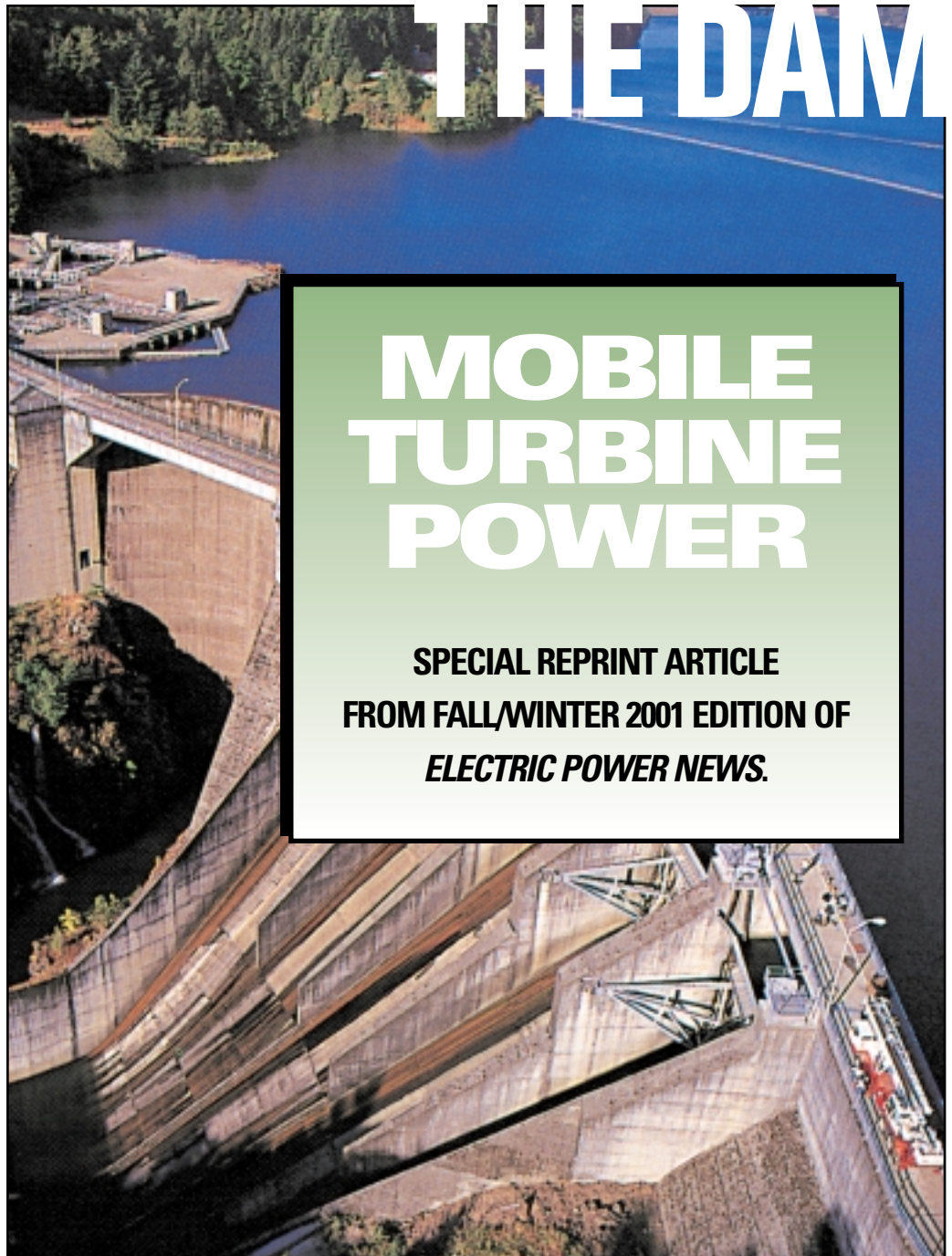
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**CAT** Rental Power

## WATER OVER THE DAM



### MOBILE TURBINE POWER

SPECIAL REPRINT ARTICLE  
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*ELECTRIC POWER NEWS.*

WHERE THE WORLD TURNS FOR POWER

# GAS TURBINE ON WHEELS

**Caterpillar helps ensure stable energy supply during Western U.S. power crisis with new XQ5200 mobile turbine rental units powered by Solar Taurus™ 60 gas turbines.**

**T**he recent power crisis in the Northwest region of the United States still has everyone, especially power producers, thinking about ways to reduce the demand on the electricity grid while continuing to provide adequate, quality power to consumers. Customers are responding by looking for alternatives to utility power from the grid due to concerns over power reliability and price volatility.

Caterpillar has taken a lead role during this power crunch by providing quality temporary power to customers in all areas of the U.S. Recently, the Caterpillar network expanded its temporary power

alternatives by adding Taurus™ 60 Mobile Turbine Power Units. The units are manufactured by Solar Turbines Inc. (a Caterpillar company) and are being debuted in the Cat Rental Power fleet.

Designated the XQ5200 based on its ISO rating of 5,200 kW, these new industrial gas turbine power modules are portable, low-cost power alternatives incorporating Solar Taurus 60 gas turbine generator set packages and prefabricated power control room modules.

The increased electrical power prices in the Northwest, as well as the challenges associated with bringing a complete power plant online quickly, are

two important reasons the XQ5200 is playing an important role in meeting peak seasonal and emergency power demands, according to Steve Garceau, Caterpillar rental power manager.

"Plans to build additional U.S. power stations are in the works," he notes, "but Northwest customers need power now." The XQ5200 provides that necessary power, quickly and cleanly.

## MOBILE POWER PLANTS

The new gas turbine power module is similar to traditional Caterpillar diesel power modules in its mobility. The trailer-mounted system is highway





*This Cat XQ5200 Mobile Power Unit incorporates gas turbine technology to provide an environmentally friendly power source that can be easily deployed and permitted.*

transportable and requires no concrete foundation, allowing it to be easily redeployed to other sites as needed.

Quick setup is accomplished with a modular design including plug-in connections. The XQ5200 is dispatchable to be online in six minutes from cold start, which makes it ideal for utility rental applications.

The compact footprint of this turbine power module is a perfect fit for minimum space requirements common at substations and industrial customer sites. "Each XQ5200 is designed for less than 350 square feet per MW," confirms Dave Dunlevy, power generation manager for Solar Turbines.

At the core of the unit is the proven 5.2 MW Taurus 60 industrial gas turbine. The turbine is rated at 5,200 kW with a heat rate of 11,263 Btu/kW per hour. It has a proven history all over the world in more than 900 applications, from cogeneration and base load to distributed generation and standby.

Utility-grade switchgear and a programmable protective relay module are standard. A range of control system options for remote operation and Supervisory Control and Data Acquisition System (SCADA) compatibility are also available.

### **POLLUTION PREVENTION**

Meeting peak seasonal or emergency power demands with an XQ5200 is also an environmentally friendly alternative. Each gas turbine power module can be configured for natural gas, diesel fuel or dual fuel operation. (Dunlevy notes that the turbines are typically most economical when natural gas is the primary fuel.)

The system also utilizes a dry low emissions combustion system (SoLoNO<sub>x</sub><sup>™</sup>) for low emission levels. This type of system uses a lean pre-mix combustion system, as opposed to water injection, to control emissions. Water injection, notes Dunlevy, can be costly for the operator as well as a logistical burden for the site.

Further environmental features include a low-profile design that minimizes installed height and meets most permitting requirements, and a sound-attenuated enclosure for quiet operation.

### **DEALER NETWORK SUPPORT**

Each XQ5200 is fully supported by the worldwide network of Cat Rental Power dealers. The network maintains the largest, most comprehensive rental fleet in the industry with more than 6,000 MW of power generation capacity, 50,000 tons of temperature control capacity, and a complete line of oil-free and oil-flooded air compressors and ancillary equipment.

For information on the XQ5200, contact Cat Rental Power at 800-RENT-CAT or visit [www.CAT-rental.com](http://www.CAT-rental.com). ■

## **Washington refinery relies on Caterpillar XQ5200 rental units**

The first customer to take advantage of the Cat XQ5200 Mobile Power Units is Equilon Enterprises LLC. The company is one of the Top 10 largest oil refineries in the United States. It is a joint venture between Shell Oil Company and Texaco Inc. and consists of four refineries that produce a combined capacity of 480,000 barrels of oil a day.

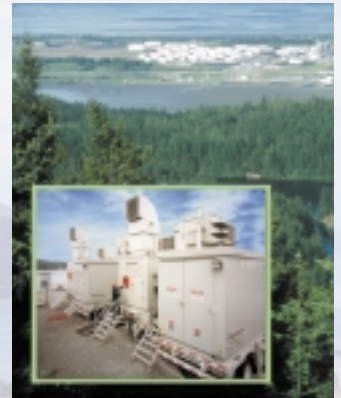
Equilon engineer Bill Tezak recently called on Cat rental dealers N C Power Systems (Tukwila, Wash.) and Peterson Power Systems (San Leandro, Calif.) for a short-term source of on-site power generation at the company's Puget Sound Refining Company (PSRC) in Anacortes, Wash.

"Peak wholesale power prices in Washington state spurred Equilon to look to other power alternatives," explains Gene Hamilton, sales engineer with Peterson Power.

"As an oil refinery, we need consistent power all the time," notes Tezak. "It became cost prohibitive for us to purchase all our power from the grid."

Working in conjunction with N C Power, Peterson Power responded to Equilon's temporary power needs with four Cat XQ5200 Mobile Power Units. The units provide 21 MW of electrical power for the refinery – approximately 60 percent of the refinery's total electrical load.

The four turbines are contracted for one year with an option to extend the rental. "These turbines are part of our solution for this year," says Tezak. "We don't know what's going to happen with the power market in the future and



we want to be prepared."

Currently, the refinery is running the units continuously. Tezak plans to continue this operation schedule as long as it is economical.

### **THE BENEFITS OF GAS**

Gas turbines were a natural choice for the refinery, says Tezak, because of quick setup time and low emission levels. Fuel cost savings were also a key factor in the decision to use natural gas turbines.

"The modules have performed flawlessly," notes Hamilton, "with no unscheduled downtime during the first four months of operation." Scheduled maintenance is conducted every three months, and no full-time operator is needed to monitor the units due to the high reliability of the modules. Remote starting and monitoring functions are controlled inside the refinery.

Overall, Tezak is very happy with the XQ5200s as well as the Cat dealers who support them. "Peterson Power is an extremely helpful dealer," he reveals. "They've dealt with every problem and they've always gone beyond what they needed to do."



# POWER



on your own

# terms.

## **Cat® Rental Power**

Caterpillar is the largest rental electric power provider in North America, and supplies power for more utility projects than anyone, with:

- 1800 locations
- 7800+ generator sets
- 4000+ megawatts available for rent
- 24/7 nationwide service, support and expertise
- More utility rental power projects than anyone
- From greenfield to utility interconnect
- Diesel or gas, recips and turbines

With over 60 years in the business, we've also learned that no two needs are alike, which is why we offer flexible financing options.

[www.cat-rental.com](http://www.cat-rental.com)



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