

## HIGHWAY TOLL PLAZA

### POWER SOLUTIONS CASE STUDY of the GEORGIA STATE ROUTE 400 TOLL PLAZA



## ON THE ROAD WITH GENERAC'S MODULAR POWER SYSTEM

#### UNITS

400 kW Diesel Modular Power System (2 x 200 kW Natural Gas Gensets)

#### LOCATION

Atlanta, Georgia

When it was built in the early 1990's, Georgia State Route 400 became an important element in the Atlanta road network, creating a key link in the area's transportation system. Today, Route 400 sees traffic of more than 125,000 vehicles per day and is more important than ever in helping people and goods reach their destinations.

The road's single toll plaza is a busy place indeed. There are eighteen lanes for the collection of tolls, including four cruise card lanes for quick passage. The plaza and its offices are open around the clock and the demand for electricity is considerable. In addition to facility lighting and normal business operations, a significant amount of power is required to operate two elevators that lift heavy loads of coins several times a day.

proved insufficient to meet an electrical load estimated at 175 kW — which was needed to keep the elevators running — it was obvious that an upgrade was needed.

Reviewing current and future needs, toll plaza manager Robert Smith and the electrical contractor for the job, Metro Power Inc., considered a number of alternatives that would provide up to 400 kW of power. That output would provide redundancy for the loads as well as accommodate the inrush spike from the elevators. During those peaks, the demand would momentarily increase to just over 200 kW.

“The elevators operated smoothly and our entire operation kept going during the outage,” said Plaza Manager Robert Smith. “You could hardly tell that the generators were running. These new units are a lot quieter than the old ones.”

The plaza was constructed in 1993. Its backup power was provided by an uninterruptible power supply (UPS) battery array for short-term coverage and two Kohler gensets of 60 and 100 kW for longer duration outages. When those generators eventually

Natural gas became the fuel of choice because of its availability at the site and its lower emissions profile. However, the high cost of a large, single engine, gaseous-fueled generator caused concern. Fortunately, Generac's Modular Power System (MPS) offered a

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superior and less costly alternative by paralleling and combining the output of two smaller natural gas generators.

Generac's MPS features onboard paralleling technology that eliminates the need for expensive paralleling switchgear. By using smaller, mass-produced engines as prime movers, MPS gensets cost less than traditional single engine solutions and offer the additional advantages of redundancy, flexibility and scalability.

After reviewing alternative methods of ensuring backup power, the Georgia State Road & Tollway Authority selected MPS as the best standby power solution for its needs. The project was awarded to Metro Power, one of the area's foremost electrical contracting firms. The Generac gensets were supplied by Pro Power Solutions, the Generac dealer in Norcross. Pro Power Solutions is also providing ongoing maintenance and service support.

The toll plaza's new system, consisting of two 200 kW natural gas gensets and the PowerManager® digital control platform, is integrated with the UPS to provide seamless power in the event of an outage. Standard sound attenuated enclosures designed and built by Generac keep noise outputs to a minimum to avoid disturbing nearby residents.

When Hurricane Ivan ravaged the Atlanta area in September of 2004 and caused a massive blackout, the Generac system provided power to the toll plaza for more than fourteen hours. "It ran like a champ," says Robert Smith. "The elevators operated smoothly and our entire operation kept going during the outage. You could hardly tell that the generators were running. These new units are a lot quieter than the old ones. Everyone around here appreciates that."

## **GENERAC®**

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