

## CASE STUDY

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March 26, 2010

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### **MTU Onsite Energy standby power system helps keep new commuter rail running on time**

*Passengers riding Minnesota's new Northstar Commuter Rail depend on well-maintained trains for a fast, safe and reliable commute along the 40-mile run between downtown Minneapolis and the northwest suburbs. The MTU Onsite Energy standby power system serves the line's only maintenance facility, where trains are serviced, repaired and even washed.*

**MINNEAPOLIS** – Minnesota's first commuter rail line, which began operation in November 2009, is expected to carry up to 3,400 passengers a day during the first year of operation, helping to reduce traffic congestion as well as commuter travel time. At a cost of \$320 million, Northstar Rail includes six new train stations and an 80,000-square-foot vehicle maintenance facility where diesel-electric engines and passenger cars are serviced and even washed. Because safe and reliable service is paramount to the new commuter rail line, engineers/consultants specified a 1,000 kW [MTU Onsite Energy](#) emergency standby generator set for the maintenance facility to ensure that, even if a utility outage occurs, trains will be ready and in service when needed.

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[Northstar Rail](#) trains are powered by diesel-electric locomotives and therefore run independently of utility power. All five locomotives and the 18 passenger cars are serviced at the vehicle maintenance facility at the Big Lake Station, the northwest terminus of the line, and it is here that reliable electric power is needed to keep trains running on time. “The MTU Onsite Energy generator supports all of the vehicle maintenance facility’s electrical loads, so regardless of utility power outages or weather-related power outages, the facility is operational and the trains still run,” said Tim Stalpes, sales engineer for [Interstate Power Systems](#), the local distributor for MTU Onsite Energy.

### **MTU Onsite Energy power system supplies building’s 800 kW load**

The vehicle maintenance facility is 38 feet high and more than 600 feet long and includes four different types of rail track: a component removal track, designed for repairs on two cars at once; a larger repair-and-maintenance track; a storage-and-inspection track; and a train-wash track, located in a separate building. The building’s electric loads include HVAC, lighting and electrical service to the administrative offices, but the majority of the load is for large-scale industrial equipment for the ongoing maintenance and repairs performed on the cars and engines. This includes truck hoists and a wayside power cabinet for the component removal track. Wayside power provides heating, lights and ventilation to trains when they are not powered by the diesel-electric locomotive. The train wash alone is 20 percent of the load.

The 1,000 kW MTU Onsite Energy power system includes an MTU 16V2000 engine with 1,495 brake horsepower, a 480-volt alternator and transfer switch. The Series 2000 engine features an advanced diesel engine controller, or ADEC, that optimizes combustion and allows the engine to meet current exhaust emissions requirements. “In the event of a utility power outage, the generator will assume the load within 10 seconds of power loss,” said Clarence Cronin of [Design Electric](#), St. Cloud, Minn., the project’s electrical contractor.

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Because it's likely the facility will expand in the future, or the electrical loads will increase, the power system is sized for approximately 20 percent growth.

"We call the Series 2000 a workhorse generator set because of its reliability," said Stalpes. "This MTU Onsite Energy power system is designed for robust applications that need dependable electrical power." The generator set is located outside of the facility and housed in an aluminum enclosure for added corrosion resistance. A 1,400-gallon fuel storage tank provides up to 24 hours of running time.

**Generator set maintenance: Northstar service, Interstate training**

"Most customers look to us for generator system maintenance," said Stalpes, "but a small percentage of customers conduct their own maintenance when they are equipped and trained for it. Typical generator set maintenance includes regular inspection and exercise to ensure the generator will start and run when required. Since Northstar trains are diesel-electric units, the maintenance facility has diesel mechanics on hand. They have the equipment, personnel and training to maintain the generator set. In this case, Interstate Power Systems provided training and operational protocol, and we are always available for assistance when needed."

The Northstar Rail Corridor is one of the fastest-growing transportation corridors in Minnesota and the nation, creating an alternative way for people to commute. Passengers will judge their new service mostly on its on-time arrival. Helping to meet that need is the vehicle maintenance facility and the MTU Onsite Energy emergency standby power system.

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Northstar Rail trains and cars are serviced at a vehicle maintenance facility which relies on an MTU Onsite Energy power system for on-going reliable service.



The MTU Onsite Energy standby power system provides support for the vehicle maintenance facility's electric loads, including HVAC systems and large-scale industrial equipment for maintenance and repairs.



Housed in an enclosure, the 1,000 kW MTU Onsite Energy power system ensures that the Northstar Rail maintenance facility is operational despite power outages.

**MTU Onsite Energy Corporation**

MTU Onsite Energy Corp. (formerly Katolight Corporation) is a leading producer of diesel-powered generator sets from 30 to 3,250 kW and natural gas-powered generator sets from 20 to 400 kW for standby, prime power and cogeneration applications. The company also provides automatic transfer switches, paralleling switchgear, controls and accessories for complete power system solutions. Based in Mankato, Minnesota, MTU Onsite Energy Corp. combines the expertise of Katolight and MTU Detroit Diesel Power Generation under one brand to meet the ever-increasing distributed power needs of customers in North America and around the world. MTU Onsite Energy Corp. is part of the Tognum Group's business unit, Onsite Energy and Components. For more information, visit [www.mtu-online.com](http://www.mtu-online.com)

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## **Tognum**

With its two business units, Engines and Onsite Energy & Components, the Tognum Group is one of the world's leading suppliers of engines, propulsion systems and distributed energy systems. These products are based on diesel engines with up to 9,100 kilowatts (kW) power output, gas engines up to 2,150 kW, stationary fuel cells up to 345 kW and gas turbines up to 45,000 kW.

The product portfolio of the Engines business unit comprises MTU engines and propulsion systems for ships, for heavy land, rail and defense vehicles and for the oil and gas industry. The portfolio of the Onsite Energy & Components business unit includes distributed energy systems of the brand MTU Onsite Energy and fuel-injection systems from L'Orange. The energy systems comprise diesel engines for emergency standby power, prime power and continuous power, as well as cogeneration power plants based on gas engines, fuel cells and gas turbines that generate both power and heat.

In 2009, Tognum generated revenue of €2.5 billion and employs more than 8,700 people. Tognum has a global manufacturing, distribution and service structure with 25 fully consolidated companies, more than 140 sales partners and over 500 authorized dealerships at approximately 1,200 locations. The shares of Tognum AG (ISIN: DE000A0N4P43) have been stock-exchange listed since 2007 and are included in the MDAX.

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