



# Standby power

## > Case History

Audubon County Memorial Hospital, USA



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### **Where:**

Audubon County Memorial Hospital,  
Audubon, Iowa, USA

### **What:**

Combined distributed generation and standby power with paralleling load transfer equipment

### **Purpose:**

Supply standby power for growing needs;  
eliminate power surges during monthly testing;  
reduce energy costs

### **Primary choice factors:**

Cummins Power Generation paralleling load transfer equipment and pre-integrated generator set with PowerCommand® digital controls

## **Hospital reduces utility costs through distributed generation program**

AUDUBON, IOWA, USA — After a recent building expansion, officials at Audubon County Memorial Hospital found that they had outgrown their existing 175 kW standby generator system. Total power use in the 25-bed hospital had grown to about 375 kW. The hospital's electrical system could not supply enough power for both its regular systems and the emergency systems required by building codes.

In addition, when the generator was test-run each month as part of electrical code requirements, the existing closed transition automatic transfer switch caused a short power disruption as it transferred the hospital's loads from the utility to the standby generator and back again.

"This action could disrupt computer systems if they were not properly backed up, make lights flicker and create power surges that were hard on the generator and the hospital's electrical equipment," said Dale Willenborg, plant operations manager.



At Audubon County Memorial Hospital, paralleling load transfer equipment eliminates power surges during monthly testing.



The 600 kW generator is housed in a 20' x 10' weatherproof container on the hospital grounds.

### Updating the system

Eric Carlson, sales engineer with Cummins Great Plains, the regional distributor for Cummins Power Generation, was asked to design a new and larger standby power system. Carlson recommended a generator large enough to supply all their electrical needs, and paralleling load transfer equipment that would eliminate disruptions in electrical service during system tests.

Although the hospital only needed 250 kW to supply life-safety systems, Carlson suggested that a generator sized to handle their total power needs might allow them to take advantage of economic incentives. MidAmerican Energy, the local utility, offered a curtailment program that would reward the hospital for taking its entire load off the grid during times of peak demand.

The hospital chose a Cummins Power Generation PowerCommand 600 kW diesel generator set and a Cummins Power Generation PLTS 1200G paralleling load transfer system.

### Parallel load transfer is key to smooth operation

Carlson explained that the paralleling load transfer equipment not only provides smooth transfers between utility power and generator power, it is also easier on all the components in the power system.

*“The generator does not have to assume the hospital’s full load instantaneously. This eliminated the severe voltage and frequency dips that occur with conventional closed transition transfer switches.”*

“With the paralleling load transfer equipment, the generator and the utility operate in parallel for about five seconds while the power is gradually transferred from the utility to the generator,” Carlson said.

This smooth transition also helps the hospital participate in the utility’s curtailment program. Under the agreement, the hospital can be asked to start its generator and take its load off the grid up to 16 times during the summer peak demand months. In return, the hospital gets a reduction in its annual energy bill of up to \$11,000.

### The utility benefits, too

The new generators help the utility as well, said Gary Stodter, system protection engineer with MidAmerican. “The curtailment program benefits the utility by decreasing the load that we have to supply during the peak load. Getting a customer load off the system allows you to defer some construction. And, if you’re not building anything, you don’t have to pass that cost on to the ratepayer.”

To prevent the utility lines from being inadvertently energized by the hospital’s standby generator, a Schweitzer SEL 351-7 protective relay was installed at the utility’s request.

“Monthly testing has gone really well,” said Willenborg. “When the unit is started and engaged, there are no disruptions in power, no surges or flicker. Now, you just hit the start button and you don’t even notice when the generator comes on- or offline.”

For more information about integrated standby power systems, contact your local Cummins Power Generation distributor or visit [www.cumminspower.com](http://www.cumminspower.com).

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