



## St. Helena Hospital



Supermarket Hospitality Education Datacenter **Healthcare** Industrial Government/Municipal Office Special

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Energy

### St. Helena Hospital Cares for the Environment

with a Next-Generation PureCell Model 400 Fuel Cell Powerplant

### St. Helena Hospital Uses State-of-the-Art Technology to Promote Healing



*"The UTC Power fuel cell system is a good fit for our facilities because we need power and thermal energy around the clock. Keeping the lights on and the rooms heated 24/7 is a big job that just got easier, cheaper and a lot cleaner."*

*Stan Tempchin, Facilities Director  
St. Helena Hospital*

Part of Adventist Health and located two miles north of the town of St. Helena in beautiful Napa Valley, St. Helena Hospital is a 181-bed full-service community hospital offering the latest in state-of-the-art medical, surgical and diagnostic services. And that's not all that's state-of-the-art at this campus. St. Helena Hospital chose a PureCell Model 400 fuel cell system to provide 60 percent of the hospital's electricity needs and 50 percent of its space heating and domestic hot water requirements.

<b>Equipment:</b>	PureCell Model 400 combined heat and power solution
<b>Installed:</b>	October 2010
<b>Location:</b>	St. Helena, California
<b>Provides:</b>	Power for electrical needs Space heating Domestic hot water

Funded in part by a grant from the California Self Generation Incentive Program (SGIP) and a generous contribution from an anonymous donor through the Napa Valley Community Foundation, the fuel cell will help reduce energy costs while contributing to a cleaner environment.

#### • Energy Productivity

It's all about doing more with less. More than half of the energy potential in traditional power generation goes up the stack as waste heat. In contrast, the UTC Power fuel cell converts heat exhaust into heating and cooling, turning potential waste into usable energy. Designed to operate in water-balance, the unit requires no consumption or discharge of water under normal operation — saving millions of gallons of water when compared to central generation and other fuel cell



Harvest the productivity.

Value the security.

Preserve the planet.



**PureCell Solution Advantages**

**Energy Productivity**

- System efficiencies of up to 90% (compared to 33% for traditional power sources)
- Energy costs reduced
- Natural resources conserved

**Energy Security**

- Continuous operation provided
- Business services protected
- Community safety enhanced

**Energy Responsibility**

- Ultra-low emissions
- Carbon footprint reduced
- Water conserved

**Proven Experience**

- Over 50 years of fuel cell experience
- Sole fuel cell supplier to NASA for manned space missions for over 40 years
- Over 300 PureCell systems installed in 19 countries on 6 continents
- Over 1.5 billion kilowatt hours of commercial fuel cell operation



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technologies. In addition, the Model 400 boasts an industry best 10-year stack life with a 20-year product life and overall system efficiencies of up to 90 percent.

**• Energy Security**

To increase operational reliability, the energy management system computers at St. Helena Hospital are programmed to rely on the fuel cell as the primary source of heat and power for three of the buildings on the hospital's campus.

*"UTC Power is pleased to be associated with St. Helena Hospital, a true leader in its holistic approach to patient care as well as its commitment to the environment of picturesque Napa Valley. Hospitals such as St. Helena are especially well-suited for fuel cells because they are able to fully and continuously utilize the electric and thermal output from the system."*

*Neal Montany  
Director, Stationary Fuel Cell Business  
UTC Power*

**• Energy Responsibility**



St. Helena Hospital is proving that sustainability makes economic sense. While reducing its carbon footprint, it's also conserving natural resources. The UTC Power fuel cells will reduce the facility's carbon footprint by 652 metric tons each year.\* To achieve the same positive environmental impact, 151 acres of forest would need to be planted.\*\*



The power generated by a megawatt of fuel cells saves over 4 million gallons of water each year† that would otherwise be wasted by conventional electrical generation. That's enough water to fill more than 6 Olympic-size swimming pools. Water conservation is an increasing priority for businesses and humanity as we collectively struggle to conserve precious water resources.



Reduction of harmful emissions like nitrogen oxides (NOx) is yet another environmental benefit of fuel cell technology. NOx emissions will be reduced at the hospital by over 2 metric tons each year, which equates to the same environmental benefit as removing 121 cars from the road.‡

\* Based on U.S. EPA eGrid data for non-baseload generation in sub-region.

\*\* Each acre of forest assumed to absorb 1.3 ton of carbon per year (Ref: Intergovernmental Panel on Climate Change).

† Based on the average use of 1,062 gal/MWhr of power generation plants in the U.S. (Ref: U.S. Geological Survey).

‡ Each car assumed to generate 38 lb NOx/year (Ref: U.S. EPA).



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