

FuelCell Energy

Ultra-Clean, Efficient, Reliable Power

Santa Rita

problem: The Santa Rita Jail in Alameda County, California needed to augment its 1.2 megawatt solar array to reduce reliance on the grid, improve power reliability, and manage peak load requirements while working within strict clean air target requirements.

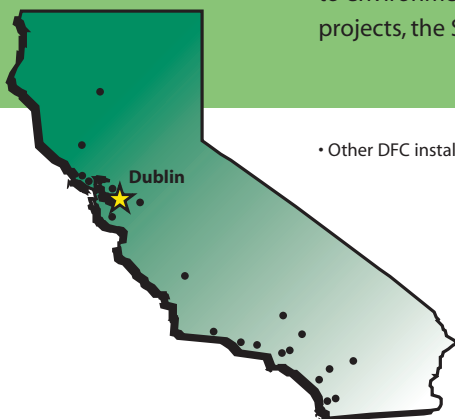
solution: Alameda County decided to implement a DFC1500® Direct FuelCell® (DFC®) stationary fuel cell power plant from FuelCell Energy®. The DFC complements the solar array with the addition of one megawatt (1 MW) of Ultra-Clean baseload power. Available 24/7, the DFC does not depend on wind, sunshine, or the grid to provide reliable power. Pollutant emissions of nitrogen oxides (NOx) and sulfur oxides (SOx) are negligible, and CO2 greenhouse gas emissions are dramatically reduced compared to fossil fuel plants. Using natural gas as the source fuel, the DFC internally reforms hydrogen gas required to power the fuel cell. The waste heat byproduct is also put to good use, providing a source of hot water for the jail.

example of how a large secure facility can improve energy efficiency while simultaneously decreasing overall energy costs and harmful atmospheric emissions.

Combined with the 1.2 MW rooftop solar array (the largest in the nation at the time of its installation), as well as an extensive retrofit of many facility systems including lighting and air conditioning, the fuel cell system has significantly improved energy independence at the jail. The facility now produces approximately two-thirds of its baseload electrical requirement (estimated at 3.2 MW) on-site, decreasing reliance on the grid and guaranteeing a reliable source of power for the facility regardless of time of day, power grid supply interruptions, or even natural disasters.



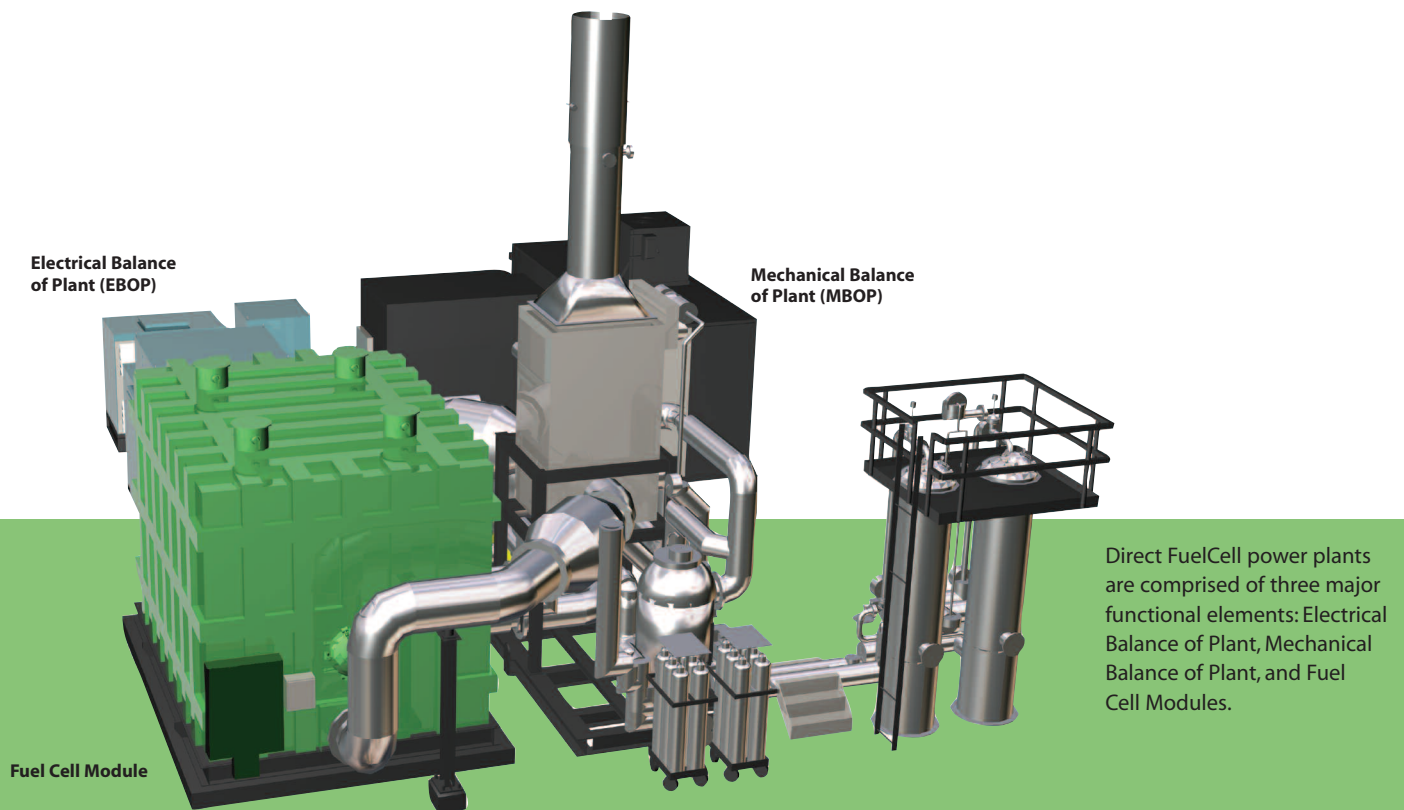
result: Highlighting Alameda County's commitment to environmentally-conscious engineering projects, the Santa Rita County Jail is a perfect



• Other DFC installations

About DFC Power Plants

Direct FuelCell power plants operate on a variety of fuels, including methane from biogas, waste gas from industrial processes, and natural gas.



Direct FuelCell power plants are comprised of three major functional elements: Electrical Balance of Plant, Mechanical Balance of Plant, and Fuel Cell Modules.

Combined, the DFC and solar array can produce 80% to 90% of the facility's power requirement during peak demand.

In addition to the 1 MW of utility-grade power, the system provides 18% of the jail's hot water needs. The DFC operates at an impressive 47% electrical efficiency, and up to 80% efficiency using Combined Heat and Power (CHP).

Overall, the County of Alameda saves over \$250,000 per year from their investment in on-site power generation. The Ultra-Clean system also eliminates approximately 3,200 tons of harmful greenhouse gas emissions per year compared to a traditional fossil-fueled power plant.

About the Santa Rita County Jail

Originally constructed in 1947, the Santa Rita County Jail currently holds more than 4,000 inmates housed in eighteen individual housing units. The facility ranks as the third largest correctional facility in California and the fifth largest in the nation, and is recognized as one of the most technologically innovative correctional facilities in the world.

About FuelCell Energy

FuelCell Energy develops and markets Ultra-Clean power plants that generate electricity with higher efficiency than distributed generation plants of similar size and with virtually no air pollution. For more information on the company, its products, and its worldwide commercial distribution alliances, please visit www.fuelcellenergy.com.

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