Dallas, Texas – The Parkland Health & Hospital System serves Dallas-Fort Worth community residents and has been recognized by U.S. News & World Report as one of “America’s Best Hospitals” for 17 consecutive years. As part of its commitment to outstanding patient care, Parkland Health & Hospital System is currently constructing a new hospital facility in the Dallas area.

This new, 17-story facility, which is scheduled to open in 2014, will encompass approximately 2.5 million square feet for 862 inpatient beds, an outpatient center, parking, and a central utility plant and logistics building—one of the largest hospital construction projects in the country today.

To help optimize the energy efficiency of the new central utility plant, Parkland Hospital is partnering with Siemens Industry, Inc., to implement the Demand Flow™ solution and building automation controls.

**Client Objectives**

As it constructs its new, state-of-the-art facility, Parkland Hospital wants to achieve optimal plant energy efficiency to help earn the LEED® (U.S Green Building Council’s Leadership in Energy and Environmental Design) Silver certification. Achieving this certification will help reduce the facility’s energy consumption as well as utility costs to save money for the hospital and taxpayers.

Overall, Parkland Hospital’s facilities team wanted the central plant’s average energy efficiency to fall below .70 kW per ton and Demand Flow will be a significant contributor to achieving this goal.
Siemens Solutions
Initially, facility engineers were interested in a competing, network-based control strategy to deliver energy efficiency objectives for the new facility. Siemens introduced its Demand Flow solution to Parkland Hospital as an alternative strategy to help reduce energy use and make the central plant more efficient. After a detailed, third-party engineering review of the options, an independent consultant determined that Demand Flow “was the most effective chiller plant control algorithm” and would result in maximum system performance and energy savings.

Demand Flow is a patent-pending and proven control strategy that optimizes central chilled water systems to reduce the central plant’s total energy consumption by 20-50%. Demand Flow offers a holistic approach for optimizing an entire chilled water system, including potential air-side savings. This optimization increases the deliverable tonnage of the chilled water plant and simplifies plant operations and controls, without sacrificing occupant comfort in favor of energy savings. The Demand Flow Controller’s specialized algorithms can deliver chilled water system efficiencies to any existing building automation system.

To help fully optimize the Demand Flow solution within the central utility plant, Siemens is also implementing a complete facility automation control system for Parkland Hospital, including approximately 1380 variable air volume (VAV) boxes, 1560 constant volume (Cv) boxes, and 40 air handling units. Hospital plans call for 200 isolation rooms and 23 operating rooms. All of these solutions will be combined with Siemens energy monitoring and controlling (EMC) to continuously identify opportunities to improve energy efficiency within central plant operations.

Client Results
In addition to these solutions, Siemens is working with Parkland Hospital to create a custom dashboard to monitor plant utility consumption. The Siemens GreenTouchscreen® will provide real-time energy data in an interactive kiosk, where hospital staff and visitors can learn about Parkland’s efforts to reduce its energy usage and carbon footprint.

Based on the independent engineering analysis, Demand Flow is projected to produce energy savings in excess of $600,000 in the first year alone. The chiller plant optimization project is estimated to have an IRR of 165%, allowing for more hospital resources to be allocated to its most important function - patient care.

Although the new Parkland Hospital is expected to open in 2014, the central utility plant will be fully functional in 2012. Siemens Demand Flow and building automation controls solutions will help optimize the energy efficiency of the central plant, helping Parkland Health & Hospital System achieve its ambitious energy efficiency objectives and LEED Silver certification.