Abstract

Objective of this presentation is to describe how Energy Savings Performance Contracting (ESPC) can be applied to Federal new construction projects to promote energy efficiency and sustainable design while simultaneously enhancing energy security and reliability. A case study – the Federal Research Center at White Oak (FRCWO) – will be used to highlight the benefits of this approach to Federal agencies.

Challenges abound in the Federal new construction arena. Requirements for things such as blast protection, progressive collapse, LEED certifiability, and high levels of energy performance are frequently under-resourced in facilities programming. As a result, these various requirements compete for the dollars required to address the functional performance of a building. The functional needs evolve as well, putting additional pressure on the new construction budget. At the same time, there are concerns that the functionality of the facility could be jeopardized as a consequence of tying into a less than fully reliable power grid.

Application of ESPC in the Federal new construction environment can assist in meeting some of these budget and performance challenges. The ESPC/new construction approach was used to address the energy infrastructure needs at FRCWO. FRCWO will be a state-of-the-art 3 million square foot, $900 million office and laboratory compound for the FDA. GSA manages the design and construction of the campus. A combined heat and power central utility plant (CUP) is presently under construction via an ESPC. Using an ESPC to provide for the campus energy needs freed up over $27 million in capital funding that could be reapplied to meet the functional requirements of FDA.

The CUP currently includes a 5.8MW dual-fueled engine-generator, a 2MW standby diesel generator, over 3,300 tons of cooling capacity, and 48,000 Mbtu/hr of heating. CUP capacity will grow to 30MW electric generation, 14,000 tons cooling, and 85,000 Mbtu/hr heating at build-out. The case study will relate how different sources of power generation, fuel types, and distribution paths were used to achieve a high level of energy surety while simultaneously enhancing the energy performance of the FRCWO campus.