Siemens Energy converts U.S. steam turbine generators to synchronous condensers

Siemens Energy converted the units 3 and 4 steam turbine generators at the Huntington Beach Generating Station, in California, USA, to synchronous condensers. Both natural gas-fired steam units at Huntington Beach are currently owned by AES, but had been retired since 1995. By converting the two generators to synchronous condensers, AES and Siemens made a significant contribution to ensuring grid stability in Southern California.

Siemens’ scope of supply included the turnkey conversion of both cross-compound steam turbine generators to synchronous condensers. One of the steam turbine generators was originally supplied by the Westinghouse Electric Co., and the other from General Electric. Siemens supplied various solutions from the SPPA- E3000 electrical systems portfolio, and was responsible for integrating the acceleration system and the auxiliary systems into the power plant’s existing control and protection systems.

Due to the shutdown and subsequent closure of the San Onofre nuclear power plant in Southern California, the Californian grid operator, CA ISO, faced the challenge of ensuring the supply of power to 400,000 homes in the region. The grid’s stability was a critical point. The solution installed by Siemens uses “pony motors” and variable frequency drives to accelerate the generators to synchronous speed.

“By partnering with Siemens to develop and construct this important project, we supported much needed grid stability”, said Weikko Wirta, AES Southland Operations and Maintenance Manager. “This was a major undertaking, but well worth the effort to help keep the lights on and air conditioners blowing without interruption – especially during heat waves.”
Siemens AG (Berlin and Munich) is a global powerhouse in electronics and electrical engineering, operating in the fields of industry, energy and healthcare as well as providing infrastructure solutions, primarily for cities and metropolitan areas. For over 165 years, Siemens has stood for technological excellence, innovation, quality, reliability and internationality. The company is the world's largest provider of environmental technologies. Around 40 percent of its total revenue stems from green products and solutions. In fiscal 2012, which ended on September 30, 2012, revenue from continuing operations totaled €78.3 billion and income from continuing operations €5.2 billion. At the end of September 2012, Siemens had around 370,000 employees worldwide on the basis of continuing operations. Further information is available on the Internet at: http://www.siemens.com.