Department of Energy

Unique Solar Thermal Laboratory Gets an Upgrade

SEPTEMBER 10, 2010

This "power tower" is part of the National Solar Thermal Test Facility in Albuquerque, which is getting upgrades through Recovery Act funding. | Photo Courtesy of Sandia National Laboratories

The National Solar Thermal Test Facility at Sandia National Laboratories is unique – and in demand. The Facility has been instrumental in NASA tests, national defense programs and concentrated solar technology development.

The NSTTF offers Sandia scientists and visitors access to emerging solar thermal technologies, such as a solar-powered furnace; a "power tower" that collects heat from a field of heliostats; and facilities for testing heat-powered engines. It is the only U.S. laboratory of its type.

And because of that, the facility, located on Kirtland Air Force Base in southeastern Albuquerque, needs to increase space and upgrade equipment to meet needs of these visitors. The increased demand for solar energy means more customers are visiting for extended periods, and they need on-site offices for the duration of their testing.

"We just haven't had the space to accommodate the customers we already have," says Cheryl Ghanbari, a test engineer at the NSTTF. "We're far from the rest of the laboratory. It's not like they can just pop in from town and find a place to sit."

Very bright ideas

Thanks to the Recovery Act, the NSTTF will soon expand.

The facility has a nine-part list of improvements to make with the $17.78 million, ranging from the additional office space to a brand-new laboratory for optical testing.

Also in line for upgrades are equipment that tracks and concentrates sunlight, as well as facilities for testing molten salt equipment and heat-powered engines.

These equipment upgrades include replacement of the older reflective surfaces on the NSTTF's heliostats; a redesign of a rotating platform used with a reflective parabolic trough; upgrades to instruments related to the molten salt testing facility; and modernization of a mobile testing laboratory used to do testing at clients' own sites.

In addition, the NSTTF will get an entirely new laboratory for testing optical qualities -- vital for technologies that rely on reflective surfaces. The upgrades will help fight wear and tear as well as modernize some equipment and add new capabilities.

"Some of these have had attention, and some are very expensive projects that the solar budget couldn't tolerate at the time," says Ghanbari.

What does this mean for me?

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