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RECENT NATIONAL SOLAR THERMAL TEST FACILITY ACTIVITIES, IN PARTNERSHIP WITH INDUSTRY

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ABSTRACT

The National Solar Thermal Test Facility (NSTTF) at Sandia National Laboratories in Albuquerque, New Mexico, USA conducts testing of solar thermal components and systems, funded primarily by the US Department of Energy. Activities are conducted in support of Central Receiver Technology, Distributed Receiver Technology and Design Assistance projects. All activities are performed in support of various cost-shared government/industry joint ventures and, on a design assistance basis, in support of a number of other industry partners.

KEYWORDS

Solar Thermal Energy, Central Receivers, Distributed Receivers, Heat Engines, Parabolic Dishes, Solar Oven, Solar Icemaker

CENTRAL RECEIVER TECHNOLOGY

In past years, the NSTTF has conducted testsof three 5 MW_t molten salt receivers[1,2,3], as well as heat transport, thermal storage, and steam generator systems. The Molten Salt Pump and Valve Test [4,5] was the final step in proving the molten salt technology. All of these tests provided the foundation for conversion of the Solar One plant, a once through water to steam boiler receiver technology to molten salt technology by the Solar Two consortium, a collection of US utilities and industry in conjunction with the US Department of Energy. Currently, the facility is performing a number of smaller-scale tests in support of the Solar Two consortium, addressing specific component and instrumentation issues[6].

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