

NETS – 2011 Technical Tours Destinations

SPR

Sandia Pulse Reactor

ACRR

Annular Core Research Reactor
A 2-MW reactor used for various tests

GIF

Gamma Irradiation Facility

S-CO₂

Supercritical CO₂ Compression Loop

Brayton Cycle Test Loop

Sandia Solar Tower, NSTTF

The National Solar Thermal Test Facility

This test facility is devoted to the development and test of next-generation concentrating solar power systems (also known as solar thermal power systems). The NSTTF was built in the late 1970s and comprises an 8 acre heliostat field and power tower, a molten-salt test loop, a rotating platform for solar thermal testing of trough concentrators, a solar furnace, facilities for dish engine testing, an engine test facility, and numerous buildings and specialized test equipment. NSTTF is the only test facility of this type in the United States.

Pulsed Power Facilities

Pulsed Power Technology (PPT) is used to generate and apply energetic beams and high-power energy pulses. It is distinguished by the development of repetitive pulsed power technologies, x-ray and energetic beam sources, and electromagnetic and radiation hydrodynamic codes for a wide variety of applications.

Sandia's PPT facilities include:

- **Z accelerator** - produces powerful soft x rays and magnetic fields for research in high energy density physics. Z is the world's most efficient and powerful laboratory x-ray source, producing x-ray powers in excess of 200 trillion watts.
- **Z-Beamlet Laser** - The Z-Beamlet Laser (ZBL) is the third largest pulsed laser in the world. It provides x-ray images of imploding capsules and wire-array dynamics on Z experiments.
- **Saturn x-ray source** - Saturn is a modular, variable-spectrum, x-ray simulation source capable of producing 75 trillion watts in x rays.
- **HERMES III** - The **H**igh-**E**nergy **R**adiation **M**egavolt **E**lectron **S**ource (HERMES) III accelerator is the world's most powerful gamma-ray simulator.
- **RHEPP I** - Sandia's **R**epetitive **H**igh-**E**nergy **P**ulsed **P**ower (RHEPP) I facility, operating at 90 thousand watts, is a testbed for developing ion beam technologies such as the surface modification of materials.
- **RHEPP II** - Sandia's **R**epetitive **H**igh-**E**nergy **P**ulsed **P**ower (RHEPP) II, operating at 300 thousand watts, evaluates pulsed power applications including materials processing and food sterilization.