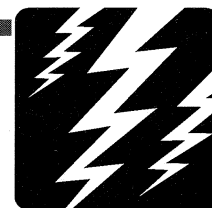


Sparks

in research, development, and application



Nuclear Generation: Another Record Year

The U.S. nuclear power industry achieved its second straight year of record power generation levels during 2000. According to information released by the U.S. Department of Energy (DOE) Energy Information Administration (EIA), total power generated was 753.9 billion kWh, 3.5% above the previous record of 728.1 billion kWh set in 1999. This represents continued growth in power production for the nuclear power industry that had produced only 577.0 million kWh as recently as 1990. The record year 2000 output was achieved despite the fact that the industry now has only 103 operating reactors compared to 111 operating reactors as recently as 1990.

Record output was attained through an annual net capacity factor of 89.1% during 2000 compared to 85.5% in 1999 and 70.2% in 1990. Monthly capacity utilization rates exceeded 90% during January, February, June, July, August, and December, months during which the power industry must meet peak summer and winter demands. The nuclear industry generated 69.2 billion kWh in July 2000, the highest level for the U.S. nuclear power industry ever.

Recent years of reliable service and declining production costs have led to increased industry interest in nuclear power plant license renewal. The Nuclear Regulatory Commission approved the license renewal applications for five U.S. nuclear power plants in 2000. Five additional applications were received and 28 more are planned to be submitted by 2004.

Oak Ridge Expands Superconductivity Research

This item is reprinted from the December 2000 issue of "DOE This Month."

The DOE's Oak Ridge National Laboratory (ORNL) is entering a new phase of high-temperature superconductivity research with its accelerated coated con-

ductor initiative. Under the initiative, researchers will be better able to create and continuously process superconducting tapes.

"We will be able to expand on our capability to conduct research with U.S. companies....," said Bob Hawsey, ORNL's superconductivity program director. "...they will be able to scale up their research to include reel-to-reel tape handling at our expanded ORNL center."

One type of equipment is in the area of reel-to-reel deposition where a superconductor coating can be placed on the substrate or template for the wire. The other equipment can be used to study the tape structure and quality and its performance in a continuous manner without chopping the wire into pieces.

DOE Offers R&D Grants for High-Temperature Superconductive System

The Office of Power Technologies within the DOE Office of Energy Efficiency and Renewable Energy released a supplemental announcement soliciting applications for research on high-temperature superconductive systems for energy or industrial applications. Proposals can be submitted for work in the research and development stage (Phase I), the precommercialization stage (Phase II), or the commercial entry stage (Phase III). DOE anticipates making 5-8 grants and has approximately \$5.5 million available

for the first year and no more than \$9 million per year for the next 3 years. Phase II and Phase III proposals require 50/50 cost sharing.

Renewable Energy Blows in the Wind

In his last week as U.S. Secretary of Energy, Bill Richardson signed an agreement with U.S. Senator Harry Reid of Nevada to build the second largest wind power facility in the U.S. It will be constructed on 664 acres of the Nevada Test Site (NTS), a former nuclear weapons testing ground that covers an area larger than Rhode Island. The agreement, signed on 17 January 2001 at the U.S. Capitol by Reid and Richardson, partners the MNS Wind Company and the Nevada Test Site Development Corporation (NTSDC) to produce energy from the wind at the NTS. This renewable energy facility will eventually help stabilize area utility supply emergencies such as the current energy crisis that is plaguing California.

Japan is also prioritizing environmentally friendly energy by forming The Wind Power Developers Association. The Tomen Corp., Marubeni Corp., EcoPower Co., Japan Wind Development Co., and the Electric Power Development Co. have joined to promote wind power generation and use, and invite the participation of other developers.

IEEE History Center Mystery Photo Challenge

Who, What, When, Where, and Why?

The IEEE History Center is asking IEEE members to help identify "mystery photos" posted each month on its Web site, http://www.ieee.org/organizations/history_center/mystery.html. The center maintains a photographic collection of more than 2,800 images and some are unidentified. Members are invited to identify the mystery photo and provide any information they can, such as the description, year, manufacturer, purpose of equipment, etc.

For more information, contact Mary Ann Hoffman, IEEE History Center, +1 732 932 1066, e-mail m.hoffman@ieee.org.