

SUBSCRIBE TO  

 **OAKRIDGER.com** **NEWS**

SEARCH

 Homes  Jobs  Autos  News

SITE MENU:

HOME

[Home](#) > [News](#) > Hot new transformer cooled by ORNL

OAK RIDGE NEWS   

Email Forums Print

Story last updated at 12:12 p.m. on September 12, 2003

# Hot new transformer cooled by ORNL

By: **R. Cathey Daniels | Oak Ridger Staff**  
[cathey.daniels@oakridger.com](mailto:cathey.daniels@oakridger.com)

There's a lot of powering up and powering down throughout the nation's electrical system, and that duty, performed by transformers, could be enhanced by a brand new concept in superconductivity.

FEATURED ADVERTISER:

Methodist Medical Center



Covenant HEALTH

A Higher Standard of Healthcare

[\[ view complete ad \]](#)

This summer, scientists tested the nation's first power transformer made with superconductors, according to Bob Hawsey, manager of the superconductivity program at Oak Ridge National Laboratory.

"They've done some preliminary testing, and so far it works," said Hawsey.

In partnership with Waukesha Electric Systems in Wisconsin and SuperPower in New York, researchers from ORNL are testing a 5 megavolt-ampere prototype at the Waukesha factory.

"We played a major role in building the cooling system for this transformer," said Hawsey. "And a staff member from fusion energy is helping with the tests."



**ORNL**

It may look big, but the nation's first power transformer made with superconductors is lighter and sleeker than its conventional counterpart so it can be rapidly deployed in urban areas to help keep the nation's electricity humming. Oak Ridge National Laboratory scientists designed the cooling system for the transformer, which was made in partnership with Waukesha Electric Systems in Wisconsin and SuperPower in New York.



*Herb Newton*  
**NISSAN**

## TOP JOBS

Curves for Women F/T or P/T World s largest fitness organization looking for energetic, self-motivated people perso... East Tennessee Children s Hospital East Tennessee Childrens Hospital has the following job opportunity available in o... A full-time orthodontic assistant is needed for a progressive and reputable practice. Prior orthodontic or dental exper...

- » [View all TopJobs](#)
- » [About TopJobs](#)

## TOP HOMES

FSBO 4BR,3 full Baths Basement Rancher 2 car garage,\$129,000 Open House Sun 2-4 14 Moore Lane or call for appt. 482-17...

- » [View all TopHomes](#)
- » [About TopHomes](#)

## ADVERTISERS

-  **Y-12 FEDERAL CREDIT UNION**  
865-482-1043
-  **ROLLING HILLS APARTMENTS**  
865-483-5357
-  **WEATHERFORD MORTUARY**  
865-482-2464
-  **CREATIVE CARPET**  
865-481-2544

## MESSAGE BOARDS AND POLLS

**What type of establishments would you like to see in a revitalized Oak Ridge Mall?**

By using high-temperature superconducting transformers, voltage switches can be made minus the 23,000 liters of oil used in conventional transformers.

That in turn reduces the weight of a power transformer from about 75 tons to about 45 tons for a 30 megavolt-ampere unit, or the size typical of a substation in a medium-sized city.

Leaving out the oil allows the insulation system to continue to hum during high-stress conditions - and without loss of transformer service life.

"All of a sudden it's smaller and lighter," said Hawsey. "Rapid siting in more dense urban areas is an advantage, it's more environmentally sound cause we're taking the oil out, it's more efficient, you've got fewer fire suppression needs - all of this makes this a really sound solution."


If the Waukesha transformer is called to service in an upgraded power grid, all bets are that ORNL's patented second-generation superconducting paper-thin wire, RABITS (rolling assisted, biaxially textured substrates), will join that effort.

- Restaurants
- Clothing Stores
- Music Stores
- Athletic Stores
- Toy Store
- Book Store
- Electronics Store
- All of the above
- None of the above

[Submit Your Vote](#)

[View Results](#)

 [Email This Story to a Friend](#)

 [Post a Comment on This Story](#)

 [Printer Friendly Version](#)