

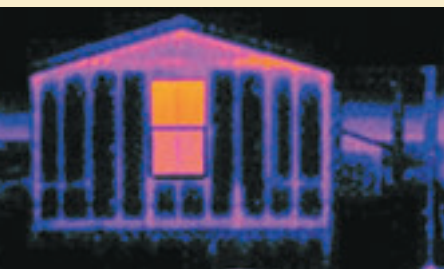
The Revolution of the Manufactured Housing Research Alliance
TECHNOLOGIES

About MHRA

The Manufactured Housing Research Alliance (MHRA) is the research arm of the manufactured housing industry.

■ *Technologies* highlights the research of MHRA and examines other research and development activities throughout the industry.

■ For more in-depth information about research in the factory-built housing industry, or to find resources mentioned in *Technologies*, visit the MHRA Web site at www.mhrahome.org. ■



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 Research Alliance**

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President Bush Welcomes New "Creative Technology"

With the tight envelope in today's manufactured homes, fresh air ventilation and humidity control are important considerations. The development of new technologies is critical to help provide affordable improvements in humidity control and energy consumption.

Just such a project, funded by a \$420,000 grant from the U.S. Department of Energy, is now underway. Oak Ridge National Laboratory (ORNL) has partnered with Western Carolina University (WCU) to build on existing heat pump technology to develop a prototype for a Water-Heating Dehumidifier (WHD).

"This new integrated

appliance will offer affordable dehumidification along with energy-efficient water heating," said Marilyn Brown, Ph.D., deputy director of the Engineering Science and Technology Division at ORNL.

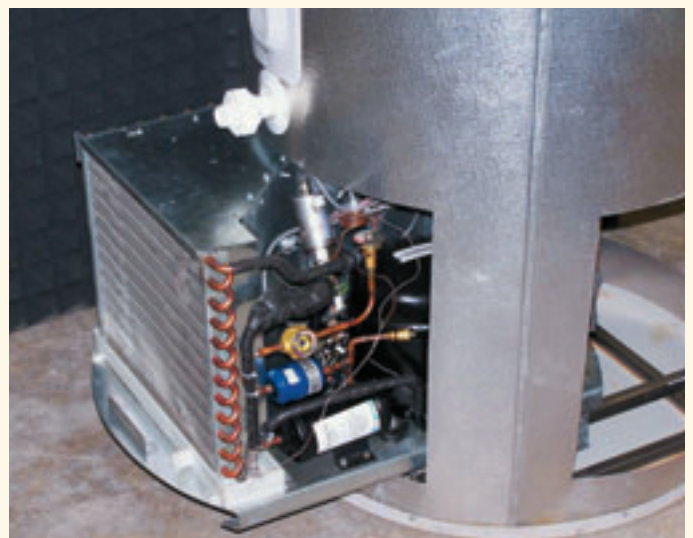
In March, President George Bush saw a demonstration of the prototype WHD at an Energy Conference in Columbus, Ohio. According to the *Asheville Citizen-Times*, "Bush called the project an example of the 'creative technologies' the nation must develop to decrease its independence on foreign fuel."

According to Brown, the goal of the partnership is to produce a WHD unit that would retail for \$400 to \$600, which is about the

same as the combined cost of a separate dehumidifier and electric water heater.

"Studies show that the total power consumed [by the WHD] is about half of what you would expect from a conventional electric water heater, which in the Southeast equates to roughly \$200 in savings per year for a family of four," said Aaron Ball, Ph.D., associate professor of engineering and technology at Western Carolina University.

The WHD will also seek ENERGY STAR certification, making it particularly useful for manufactured home producers that seek to find innovative ways to meet ENERGY STAR requirements while also addressing



A prototype of the Water-Heating Dehumidifier



Illustration of a proposed condenser mechanism for the WHD

the concern of excess moisture in southern climates.

“We had manufactured housing in mind when we first proposed the WHD,” said John Tomlinson, Ph.D., building equipment research program manager at ORNL.

A final prototype of the

WHD will be developed and field-tested within the next year to demonstrate its value in reducing homeowner energy use. Researchers will work closely with industry to develop a strategy to ultimately bring the technology to market. ■

ENERGY STAR Gets Right-Sized

It's not just that super-sized order of French fries in the drive-thru that can lead to unintended results. The same applies to cooling equipment, which if ordered too big, can bloat a homeowner's budget and result in an overuse of energy.

Oversized cooling equipment can also lead to poor dehumidification, causing uncomfortable homeowners to lower the set-point on the thermostat and risk moisture problems due to condensation.

To combat this problem, the Manufactured Housing Research Alliance (MHRA) is set to release new **Manufactured Home Cooling Equipment Sizing Charts** this

spring that will allow installers to take full advantage of the benefits of “right-sized” cooling equipment for ENERGY STAR-labeled manufactured homes.

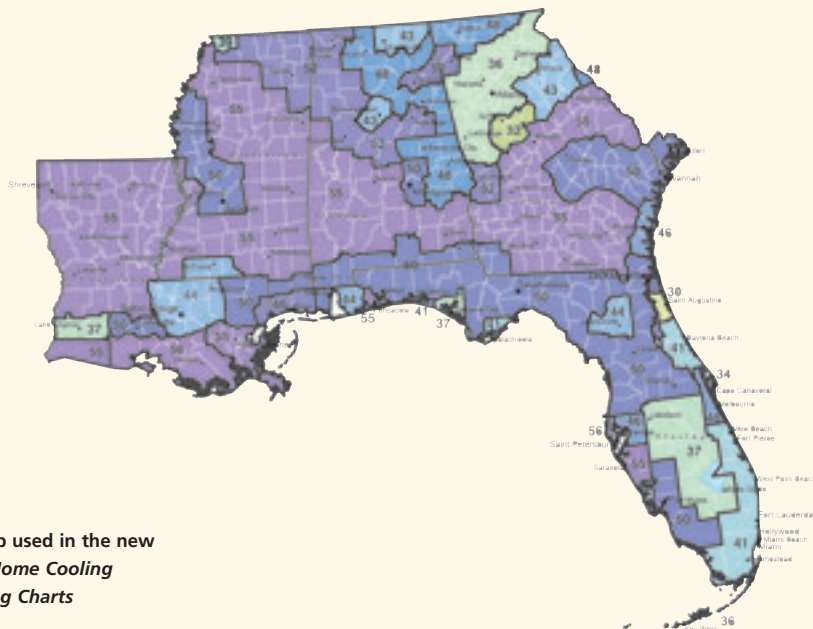
ENERGY STAR-labeled homes offer an improved level of energy efficiency that often requires lower-capacity cooling equipment.

MHRA's original sizing charts, which included sizing requirements for the HUD standard energy-efficiency requirements and the Alliance Energy Package, were developed for 38 states and have become a widely-used resource in the manufactured housing community.

The new sizing charts will accommodate the numerous ENERGY STAR packages available in **ENERGY STAR Labeled Manufactured Homes: Design, Manufacturing, Installation and Certification Procedures**. They will also include sizing recommendations for standard for HUD-Code homes.

The charts will come in an easy-to-read and be intuitive format. They include the entire U.S. and may be used for homes up to 3,000 square feet.

The new charts will be available for download from MHRA's Web site at www.mhrahome.org. ■



Sample of a map used in the new **Manufactured Home Cooling Equipment Sizing Charts**