

September 19, 2008

Energy Efficiency Makeover transforms Donaldson couple's home

Little Rock, Ark. — Sept. 18, 2008 — During August, Carroll and Sue Luten's 1,517-square-foot home near Donaldson was transformed as part of the Electric Cooperatives of Arkansas' Energy Efficiency Makeover project. The home was selected as the makeover winner from more than 1,000 applications. As the winners, they received home improvements valued at about \$50,000.

According to Doug White, vice president of systems services for the Electric Cooperatives of Arkansas, tests revealed that the home had numerous leaks where air infiltration was occurring. A blower door test showed that the home had a rate of 1.8 natural air changes per hour.

"This means that the air in the house changed almost twice every hour or once every 30 minutes," White said. "A blower door test removes air from a house using a large fan placed inside a door facing. By removing the air, negative pressure is placed on the house. When air from the outside begins to filter in to replace the air that is removed, energy auditors can determine where the house is leaking. An infrared thermal imaging camera is then used to spot the areas of air infiltration."

After the improvements were made, a final blower door test that revealed the house was down to .7 natural air exchanges per hour, a major improvement. The air infiltration was lowered well over 100 percent, resulting in a far more comfortable and the humidity levels have significantly dropped in the house, White said.

White said the Lutens learned they had won the contest on July 29 and two days later, workers arrived to begin installing a geothermal heating and cooling system. While the geothermal system was being installed, cooperative employees worked to seal the home's air leaks. Overall, 70 tubes of caulk and 50 cans of expanding foam were used to seal air leaks. Gaskets were installed around wall receptacles and light switches to further stop air flow. Additional energy saving steps included the additional of an Attic Tent, "top plates" over the interior walls, additional duct insulation, cellulose insulation and "whirlybird" ventilators on top of the roof, vinyl-framed double-paned windows with a low-emissivity (low-e) and a low solar heat gain coefficient rating, foam-backed vinyl siding, storm doors, weather-stripping around doors, new lighting fixtures and compact fluorescent lights.

In addition, the Luten received new energy efficiency appliances including a new stove, washer and dryer, refrigerator, dishwasher and freezer.

"Before, my main problem was at night," said Carroll Luten, who suffers from muscular dystrophy and Parkinson's disease. "I couldn't get enough air ... I would get under the ceiling fan because I felt like I was smothering. It is just like night and day," Carroll said. "I mean there is so much difference it is unreal."

“We believe in energy efficiency and we will continue to focus strongly on educating our members about how they can save energy,” White said. “The Energy Efficiency Makeover is one of the best ways we can do this.” The Electric Cooperatives of Arkansas plan to sponsor another energy efficiency makeover in 2009.

The project’s sponsors made the Energy Efficiency Makeover possible, White said. Sponsors of the makeover include: ESS Energy Product, Inc. of Hot Springs; Marathon Water Heaters; MOR Electric Supply of Hot Springs; Rood Heating and Air of Russellville; Royal Windows and Siding; CED Inc. of Hot Springs and Sylvania Lighting ; Ultimate-R; and Weather-barr Windows and Doors of Fort Smith. KATV-TV, Channel 7 in Little Rock and KAIT-TV, Channel 8 in Jonesboro served as media sponsors for the project.

The Electric Cooperatives of Arkansas comprise 17 electric distribution cooperatives; Arkansas Electric Cooperatives Inc. (AECI), a Little Rock-based cooperative that provides various services to the distribution cooperatives; and Arkansas Electric Cooperative Corp. (AECC), a generation and transmission cooperative. The distribution cooperatives provide electricity to more than 490,000 members, or customers, in Arkansas and surrounding states.

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