

5.3 RADIANT BARRIERS

5.3.1 The Innovation

Radiant barriers are an example of an existing product applied to an innovative use. Specifically, a radiant barrier is a double reflective aluminum foil which is placed over regular insulation in the attic (called horizontal installation) or mounted underneath rafters (called vertical installation). Radiant barriers reflect the solar heat which passes through the roof back to the atmosphere. They are capable of blocking up to 95% of far-infrared radiation heat transfer. The primary use of this technology is in the southern United States. However, it can be applied internationally along similar latitudes.

5.3.2 The DOE Role

Research on radiant barriers has been ongoing at Oak Ridge National Laboratory (ORNL) and Florida Solar Energy Center (FSEC). Most of the research funding at ORNL has been provided by DOE and TVA, though EPRI and the Reflective Insulation Manufacturers Association (RIMA) have also been significant contributors. The amount of DOE support to ORNL has been \$270,000, while TVA has contributed nearly \$310,000. Radiant barriers research at FSEC has been sponsored chiefly by the State of Florida and DOE. Over the years, the State of Florida has invested around half a million dollars toward radiant barriers research. Work on radiant barriers began at FSEC in 1981 and the first results were published in 1982.

DOE assisted in developing and testing the radiant barriers concept by supporting radiant barriers research both at FSEC and ORNL. All of the DOE-sponsored research was conducted in-house at both of these centers - there was no subcontracting.