The Alabama Radon Program conducted a study to see if short-term radon tests performed during the summer air-conditioning season, and having results less than the United States Environmental Protection Agency (EPA) action level of 1.48E02 Bq per cubic meter (4.0 pCi/L), were a reliable means in determining whether a house has excessive indoor radon. Using a database of past Alabama Radon Program tests, individuals whose homes had tested less than 1.48E02 Bq per cubic meter (4.0 pCi/L) during the previous air-conditioning seasons of 2003, 2004 and 2005, were offered a free kit to conduct a wintertime retest. The study was done by mail, utilizing an initial contact letter, with participating homeowners being mailed liquid scintillation radon detection kits in January of 2006, performing the test and mailing the completed test vial to the laboratory for analysis. There were 186 valid wintertime retests successfully completed statewide, with 50 of 186 or 26.9% having results greater than or equal to 1.48E02 Bq per cubic meter (4.0 pCi/L). In addition, 43 of 106 or 40.6% valid wintertime retests in the known highest radon incidence areas of Alabama had results greater than 1.48E02 Bq per cubic meter (4.0 pCi/L). This study demonstrates that in the known high radon areas of Alabama there exists approximately a one-in-three chance that a house tested in the summer-time and having a radon concentration of less than the action level will have a wintertime retest result of 1.48E02 Bq per cubic meter (4.0 pCi/L) or greater.