



DIVISION OF
CORPORATION FINANCE

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

September 2, 2010

Ms. Julie A. Piton
Vice President, Finance and Administration and Chief Financial Officer
AtriCure, Inc.
6217 Centre Park Drive
West Chester, OH 45069

Re: AtriCure, Inc.
Form 10-K for the fiscal year ended December 31, 2009
Filed March 30, 2010
Form 10-Q for the quarterly period ended March 31, 2010
File No. 000-51470

Dear Ms. Piton:

We have completed our review of your filings and do not have any further comments at this time.

Sincerely,

Brian Cascio
Accounting Branch Chief