

Item 5.02 Departure of Directors or Certain Officers; Election of Directors; Appointment of Certain Officers; Compensatory Arrangements of Certain Officers.

On October 13, 2011, Gregg Patterson resigned as President of the Solar Energy Business Unit of Advanced Energy Industries, Inc. (the “*Company*”) for personal family reasons. Mr. Patterson and the Company’s Solar Energy subsidiary have entered into a Separation and Release Agreement dated October 13, 2011 (the “*Separation Agreement*”), under which Mr. Patterson will receive a lump sum separation payment of \$90,000. Mr. Patterson’s receipt of the separation payment is contingent upon him providing a full release of claims for the benefit of the Company and its affiliates, as well as expiration of the statutory revocation period applicable to the Separation Agreement without the agreement being revoked. Pursuant to the Separation Agreement, Mr. Patterson will continue to provide transition services from October 14, 2011 through February 15, 2012. Mr. Patterson’s participation in the Company’s other benefit plans will be terminated as of February 15, 2012. The Separation Agreement also contains other customary terms related to confidentiality and a 2 year non-competition and non-solicitation provision. The foregoing is a summary of the material terms of the Separation Agreement. Charles Loarridge, a Vice President of the Company, will lead the Solar Energy Business Unit.

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

Advanced Energy Industries, Inc.

Date: October 13, 2011

/s/ Thomas O. McGimpsey
Thomas O. McGimpsey
Executive Vice President of Corporate Development,
General Counsel & Corporate Secretary