

N/A

(Former Name or Former Address, if Changed Since Last Report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions:

Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Item 1.01

Entry into a Material Definitive Agreement

On August 14, 2007, International Isotopes, Inc. (or the Company) entered into an agreement with Alpha-Omega Services, Inc. (AOS) pursuant to which the Company will be AOS's exclusive worldwide distributor for a new family of Type B(U) radioactive material transportation packages. The packages are intended to replace dozens of models of radioactive material containers currently used by U.S. government and commercial interests that will no longer be approved for use in the U.S. after October 1, 2008.

The initial term of the agreement begins on August 14, 2007 and will continue until the fifth anniversary following the date on which AOS receives U.S. regulatory approval to manufacture and distribute the packages. The agreement is renewable for successive one-year terms unless terminated in writing by either party sixty days prior to the end of any term. The agreement contains customary provisions with respect to warranty and service and the use of intellectual property rights.

The foregoing description of the agreement is only a summary and is qualified in its entirety by reference to the agreement, a copy of which is filed as Exhibit 99.1 hereto, and which is hereby incorporated herein by reference.

Item 8.01

Other Events

On August 22, 2007, the Company issued a press release regarding the distributor agreement described above. A copy of the press release is attached as Exhibit 99.2

Item 9.01

Financial Statements and Exhibits

(c)

Exhibits

99.1

Alpha-Omega Services, Inc. Distributor Agreement dated August 14, 2007.

99.2

Press Release issued by International Isotopes, Inc. dated August 22, 2007.

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.

International Isotopes, Inc.

Date: August 22, 2007

By: /s/ Steve T. Laflin

Steve T. Laflin

President and Chief Executive
Officer