



DIVISION OF
CORPORATION FINANCE

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

May 9, 2011

Steve T. Laflin
President and Chief Executive Officer
International Isotopes Inc.
4137 Commerce Circle
Idaho Falls, Idaho 83401

**Re: International Isotopes Inc.
Post-effective Amendment Nos. 1 and 2 to Form S-1
Filed April 15 and 29, 2011
File No. 333-171140**

Dear Mr. Laflin:

We have limited our review of your registration statement to those issues we have addressed in our comments. In some of our comments, we may ask you to provide us with information so we may better understand your disclosure.

Please respond to this letter by amending your registration statement and providing the requested information. Where you do not believe our comments apply to your facts and circumstances or do not believe an amendment is appropriate, please tell us why in your response.

After reviewing any amendment to your registration statement and the information you provide in response to these comments, we may have additional comments.

Incorporation of Certain Information By Reference

1. Please note that forward incorporation by reference into Form S-1 is inappropriate. Please revise to remove this language from the second paragraph.
2. Please revise to include or incorporate by reference, as applicable, all information required by Items 3 through 11 of Form S-1. Please refer to General Instruction VII and Item 12 of Form S-1. Given that your document currently consists of a cover page and this section, it is unclear how your document satisfies each of the item requirements of Form S-1.

We urge all persons who are responsible for the accuracy and adequacy of the disclosure in the filing to be certain that the filing includes the information the Securities Act of 1933 and all applicable Securities Act rules require. Since the company and its management are in possession of all facts relating to a company's disclosure, they are responsible for the accuracy and adequacy of the disclosures they have made.

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Notwithstanding our comments, before we can declare the amended registration statement effective, the company should provide us with a letter, acknowledging that:

- should the Commission or the staff, acting pursuant to delegated authority, declare the filing effective, it does not foreclose the Commission from taking any action with respect to the filing;
- the action of the Commission or the staff, acting pursuant to delegated authority, in declaring the filing effective, does not relieve the company from its full responsibility for the adequacy and accuracy of the disclosure in the filing; and
- the company may not assert staff comments and the declaration of effectiveness as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

Please contact Allicia Lam at (202) 551-3316 or Geoffrey Kruczek at (202) 551-3641 with any questions.

Sincerely,

Amanda Ravitz
Assistant Director

CC (by facsimile): Sonny Allison – Perkins Coie LLP