



UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549-4631

October 1, 2012

Via Facsimile

Mr. James C. Katzaroff  
Chief Executive Officer  
Advanced Medical Isotope Corporation  
6208 West Okanogan Avenue  
Kennewick, WA 99336

**Re: Advanced Medical Isotope Corporation  
Registration Statement and Pre-effective Amendment 1 to  
Registration Statement on Form S-1  
Filed September 4 and 6, 2012  
File No. 333-183705**

Dear Mr. Katzaroff:

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

General

1. Page references below are to pre-effective amendment 1 to the registration statement filed on September 6, 2012.
2. We note that you are registering 39,760,594 shares of common stock for resale by the selling stockholders while your 2011 Form 10-K suggests that non-affiliates hold only about 31,667,575 shares of your outstanding common stock. Given the size of the resale offering relative to the outstanding shares of common stock held by non-affiliates, we believe that this transaction may be an indirect primary offering by or on behalf of the company. Because you do not appear to be eligible to conduct a primary offering on Form S-3, you are ineligible to conduct an at the market offering under Rule 415(a)(4). If

you disagree with our analysis, tell us why you believe that you can rely on Rule 415(a)(1)(i) for this transaction.

For guidance you may wish to refer to Question 612.09 in the Securities Act Rules section of our “Compliance and Disclosure Interpretations” on the Commission’s website. Note that we may have additional comments on your analysis and may request additional disclosures upon review of your response. Alternatively, please consider reducing significantly the number of shares of common stock that you are registering for resale.

3. Tell us, with a view toward disclosure, how you determined to register 14,840,000 shares of common stock issuable upon conversion of convertible notes due January 13, 2014. We understand that you issued notes equal to \$550,000 on July 13, 2012 and notes equal to \$510,000 on August 2, 2012, convertible at \$0.10 per share, suggesting that only 10,600,000 shares of common stock are issuable upon conversion of the notes. If additional shares are anticipated to be issued due to an adjustment to the conversion price of \$0.10 per share, please clarify this and explain why the number of shares that you have registered is your good faith estimate of the number of shares into which the notes will be converted.
4. Tell us, with a view toward disclosure, how you determined to register the number of shares of common stock issuable upon exercise of warrants received by investors in the private placements and upon exercise of warrants received by consultants for services provided to you. If additional shares are anticipated to be issued due to an adjustment to the conversion prices of \$0.15, \$0.09, and \$0.25 per share, please clarify this and explain why the number of shares that you have registered is your good faith estimate of the number of shares of common stock issuable upon exercise of the warrants.
5. We believe that it is premature for you to register shares of common stock underlying the convertible securities which are issuable upon exercise of “Additional Investment Rights.” Note that you may register shares of common stock for resale only if the private placement was complete when the registration statement was filed. Since none of the notes or common stock purchase warrants underlying additional investment rights appear to have been issued, and selling shareholders must first exercise the additional investment rights to acquire the notes and warrants, the underlying shares cannot be registered for resale under Rule 415(a)(1)(i) at this time. Please revise.

Prospectus’ Outside Front Cover Page

6. Disclose that you are an emerging growth company as defined in the Jumpstart Our Business Startups Act of 2012. We note the disclosure on pages 11 and 23.

Offering Summary, page 5

7. Disclosure that you issued secured convertible promissory notes to two investors from July 13, 2012 to August 2, 2012 is inconsistent with disclosures in the current reports on Form 8-K filed on July 18, 2012 and August 2, 2012 that you issued secured convertible promissory notes to two investors on July 13, 2012 and to 26 investors on August 2, 2012. Please reconcile the disclosures.
8. Please remove the statement that disclosure is qualified by the transaction documents, which are incorporated into this item by reference. You may incorporate information into the prospectus by reference to documents and disclosures outside the prospectus only to the extent provided by the form. This comment also applies to disclosure on page 19 under "Description of Securities." In each case, please also ensure that you disclose in the prospectus all of the material terms of the transaction documents, the notes, the warrants and the additional investment rights. Please see Rule 411(a) of Regulation C.
9. Revise this subsection and, as appropriate, elsewhere in the registration statement so that you present accurately the material provisions of the private placements disclosed in the Forms 8-K referenced above. For example, it appears that you issued notes equal to \$550,000 on July 13, 2012 and notes equal to \$510,000 on August 2, 2012.
10. In your discussion of warrants, you only include disclosure about warrants that are exercisable for \$0.15 per share. However, we note that your fee table also references warrants that are exercisable at \$0.09 per share and \$0.25 per share. Please revise your discussion to describe all of the warrants, including their material terms and the transactions in which they were issued, that are exercisable for shares of common stock included in this registration statement.
11. Include in this subsection a discussion of the fact that you also issued warrants issued as commission for services provided in connection with the sale of securities to the selling stockholders, and briefly disclose the material provisions of those warrants. We note the disclosure in footnote (11) on page 17.
12. If the common stock purchase warrants issued to consultants for services provided to you under consulting agreements are distinct from the warrants issued as commission for services provided in connection with the sale of securities to the selling stockholders, include also in this subsection a discussion of the material provisions of those warrants. We note the information in footnote (2) to the calculation of registration fee table.

Offering Summary, page 5; Description of Securities, page 19

13. In the discussion of the transactions in which you issued the notes and warrants, please disclose the market price per share of the company's common stock on the date of the sale and the total dollar value of the shares of common stock underlying the convertible notes that you have registered for resale, using the number of underlying securities that you have registered for resale and such market price per share.
14. Please disclose that interest payments under the notes may be made in the form of common stock, and disclose how the number of shares to be issued in respect of interest will be calculated, highlighting any discount to the market price that will be applied. If there are other payments that may be made to selling stockholders, such as liquidated damages, payments made to "finders" or "placement agents," and any other payments or potential payments, please describe the terms of each such payment.

Selling Stockholders, page 15

15. Note that:

- For any selling stockholder that is a broker-dealer, the prospectus should state that the selling stockholder is an underwriter.
- For any selling stockholder that is an affiliate of a broker-dealer, the prospectus should state that the selling stockholder purchased in the ordinary course of business and at the time of purchase of the securities to be resold had no agreements or understandings, directly or indirectly, with any person to distribute the securities. If a selling stockholder cannot provide these representations, then the prospectus should state that the selling stockholder is an underwriter.

16. Notwithstanding the foregoing, broker-dealers and their affiliates who received their securities as compensation for underwriting activities need not be identified as underwriters.

Undertakings, page II-4

17. Include the Rule 430C undertaking as required by Item 512(a)(5)(ii) of Regulation S-K.

Exhibits

18. Please file a copy of, or incorporation by reference, all of the transaction documents, including, but not limited to, the notes, the warrants, and the additional investment rights as exhibits to the registration statement, and list them in your exhibit index.

Exhibit 5.1

19. Revise the opinion to state the number of shares of common stock being registered for resale under the registration statement.

Closing

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 that they have made.

Notwithstanding our comments, if you request acceleration of the effective date of the pending registration statement please provide a written statement from each registrant 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.
- 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 refer to Rules 460 and 461 regarding requests for acceleration. We will consider a written request for acceleration of the effective date of the registration statement as confirmation of the fact that those requesting acceleration are aware of their respective responsibilities under the Securities Act of 1933 and the Securities Exchange Act of 1934 as they relate to the proposed public offering of the securities specified in the above registration statement. Please allow adequate time for us to review any amendment before the requested effective date of the registration statement.

Mr. James C. Katzaroff  
Advanced Medical Isotope Corporation  
October 1, 2012  
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You may contact Edward M. Kelly, Senior Counsel, at (202) 551-3728 or me at (202) 551-3765 if you have any questions.

Very truly yours,

/s/ Pamela A. Long

Pamela A. Long  
Assistant Director

cc: Via E-Mail  
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