

MOLECULON



(617) 547-2353

139 MAIN STREET CAMBRIDGE MASSACHUSETTS 02142

RESEARCH CORP.

May 30, 1985

MS 16
P3

Dr. John Miller
Nuclear Materials Safety Section B
United States Nuclear Regulatory Commission
Region 1
631 Park Avenue
King of Prussia, PA 19406

Dear Dr. Miller:

I am writing you in reference to our recent telephone conversation and my letter of May 14 (copy enclosed), requesting an amendment to our NRC license No. 20-07896-01.

There are two major points that I would like to address. The first point is that in order to facilitate the license amendments, we would like to reduce our request for a 25 mCi I-125 limit to a 2 mCi limit. We do not foresee ever having a requirement for more than 2 mCi I-125. In addition, any I-125 purchased would be purchased in a protein bound form or otherwise chemically bound form.

The second major point concerns our request for a 1 curie possession limit for tritium. I outlined in my previous letter to the NRC that a custom synthesis for us by Amersham Corporation, of the tritiated form of the common antihistamine drug, chlor-trimeton, resulted in a very high specific activity. The total tritium radiosotope activity was 850 mCi.

Our license restricted us to a 5 mCi tritium limit. In order to take delivery of the tritiated chlortrimeton, it was necessary to request an amendment to our NRC license. We view the request for the amendment to our license as means of handling this particular incident. We do not foresee constantly having 1 curie of tritium activity in our laboratory. We are using the tritiated chlortrimeton to do in vitro diffusion experiments of this drug through skin. When these experiments are completed, our possession needs would rarely exceed 25 mCi of tritium at any one time.

In order to be in compliance with the NRC regulations and for the safety of our laboratory staff, we plan to institute a bioassay. Table I of the guide states the need for a bioassay if there is a possibility of escape of tritium into an open room from process vessels containing 100 mCi. We do not anticipate ever having greater than 2 mCi of tritium in a process vessel in an open room. Although we will receive 850 mCi, this bottle will

8507250155 850626
REG1 LIC30
20-07896-01 PDR

DEVELOPMENT • ENGINEERING

03818

ML10

JUN 05 1985

"OFFICIAL RECORD COPY"

Dr. John Miller
Nuclear Materials Safety Section B
Page 2
May 30, 1985

only be opened in a fume hood with adequate design, face velocity and performance reliability. Not more than 2 mCi will be aliquoted to another bottle for any experiments not carried out in the fume hood. Urine bioassays for tritium will be done according to the guidelines outlined on page 5 and 6 of the applications guide by any personnel exposed to the high activity tritium bottle. I anticipate doing biweekly urine bioassays for tritium during the periods that the tritium is being used. We will do wipe tests of all areas exposed to the tritium, i.e. fume hoods, laboratory benches, etc. The wipe tests, and urine samples will be counted on our LKB-wallac model 1219 liquid scintillation counter to ensure that no personnel have been exposed to or have intaken any tritiated molecules. In addition, any tritium we would possess will always be in a chemically bound form.

Finally, I would like to emphasize that at Moleculon, we keep very careful records of the receipt isotopes, and their disposal. Thank you for expediting the changes in our NRC license as quickly as possible so that we can receive our custom labeled tritium preparation.

Sincerely,

Larry Brown

MOLECULON RESEARCH CORPORATION
Larry Brown, Sc.D.
Senior Scientist

LB/cl
Enclosure
cc: Marie Allen