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FROM: Jim Fongheiser

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To : Dennis Lawyer

Date: 9/30/10

From : Jim Fongheiser

Pages : 1 (including cover page)

Subject : Haven Lake Animal Hospital License Amendment

Mail Control Number 573243, License No.: 07-31361-01

03038002

Dear Mr. Lawyer,

This letter is in response to your request for additional information concerning our amendment to the above referenced license. This response is provided to demonstrate the basis for more realistic estimates of the potential airborne concentrations of I-131 from the treatment of cats in our facility.

In order to support bounding the potential for airborne I-131 we will make the following commitments:

1. We can commit to limit the number of cat I-131 treatments to twelve per month, which would allow up to three cats at a time per week.
2. We also commit to running the fan in the treatment room at all times during the administration and stay time for the cats.

Haven Lake Animal Hospital I-131 Assumptions:

DAC for I-131 = 700 Bq/m³

Maximum number of cats administered I-131 per week = 3.

Average I-131 dose per cat = 5 mCi.

Potential airborne source term of 1.0 % administered dose = 150 uCi for three cats.

Uniform airborne migration rate over 7 days = 150 uCi/168 hours = 0.89 uCi/hr

Room size is 2,500 ft³ = 70.8 m³.

Room fan is 250 ft³/min = 6 air exchanges every hour.

Taking no credit for the ventilation fan, the maximum concentration in the room in any given hour would be:

$0.89 \text{ uCi} / 70.8 \text{ m}^3 = 1.26 \times 10^{-2} \text{ uCi/m}^3$

This is less than the DAC of $1.89 \times 10^{-2} \text{ uCi/m}^3$.

The location of the fan is directly above the administration table and between the rack of cages and the door to the room. It will effectively reduce the potential concentration in the room by a factor of at least 100, reducing the potential concentration of I-131 to $< 1.89 \times 10^{-4} \text{ uCi/m}^3$.

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NMSS/RGN1 MATERIALS-002

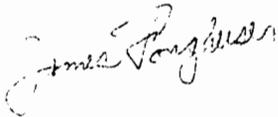
Personnel stay times in the room are limited to the care of the animals, which is less than one hour per day during the animal isolation time. Personnel do not remain in the room unnecessarily.

Based on these estimates, the use of unit doses of liquid I-131 in this facility for animal treatment does not pose a significant hazard to staff or members of the public.

If you need any further information to process this license amendment request please let me know.

Thank you for your assistance in this licensing effort.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Fongheiser". The signature is written in a cursive style with some loops and flourishes.

Jim Fongheiser
Radiation Safety Officer
cc: Chris Coon, DVM