



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, ILLINOIS 60532-4352

JAN 25 2010

Mike Zimmer, Ph.D.  
Radiation Safety Officer  
Northern Shared Medical Services  
209 Limestone Pass  
Cottage Grove, WI 53527

Dear Dr. Zimmer:

Enclosed is Amendment No. 04 to your NRC Material License No. 48-32697-01 in accordance with your request. Please note that the changes made to your license are printed in bold font.

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region III office at (630) 829-9887 so that we can provide appropriate corrections and answers.

**At this time I was unable to approve your request to authorize the use of fluorine-18 as fluorodeoxyglucose (F-18) as an imaging agent in canines and Michael C. Muhlbauer, D.V.M. as an authorized user (AU) to your license because your letter received September 23, 2009 was insufficient to complete our review.**

**If you wish to pursue this request, please provide the information requested below, addressed to my attention and include the control no. 318592 to facilitate proper handling. We will then continue our review.**

Please review the attached excerpt from NUREG 1556, Vol. 7, Appendix H, "Considerations for Laboratory Animal and Veterinary Medicine Uses." As your proposed use of the F-18 appears to involve elements of both laboratory animal and veterinary medicine uses, please address all of the information requested in this document.

In particular, please explain in explicit detail how you will restrict and secure the outdoors area at the veterinary clinic where the injected canines are brought to void between injection and imaging. Will this area be posted in accordance with 10 CFR Part 20? Will this area require surveillance?

Please provide a worst case scenario radiation/contamination level calculation for the F-18, assuming a maximum activity administered to the canine. Please show all of your work, i.e., equations, decay, assumptions, constants, parameters, any shielding and/or distance and/or occupancy factors employed.

**If you have further questions concerning these matters please contact me at (630) 829-9841 or (800) 522-3025, ext. 9841.**

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document

**M. Zimmer**

system (ADAMS). The NRC's document system is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

You will be periodically inspected by NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation, or imposition of a civil penalty, or an order suspending, modifying or revoking your license as specified in the General Statement of Policy and Procedure for NRC Enforcement Actions. Since serious consequences to employees and the public can result from failure to comply with NRC requirements, prompt and vigorous enforcement action will be taken when dealing with licensees who do not achieve the necessary meticulous attention to detail and the high standard of compliance which NRC expects of its licensees.

Sincerely,



Colleen Carol Casey  
Materials Licensing Branch

License No. 48-32697-01  
Docket No. 030-37826

Enclosures:

1. Amendment No. 04
2. Appendix H, NUREG 1556,  
Vol. 7