

NRC FORM 313  
(10-2005)  
10 CFR 30, 32, 33,  
34, 35, 36, 39, and 40

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0120

EXPIRES: 10/31/2008

Estimated burden per response to comply with this mandatory collection request: 4.4 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0120), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

IF YOU ARE LOCATED IN:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY  
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS  
U.S. NUCLEAR REGULATORY COMMISSION  
WASHINGTON, DC 20555-0001

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

MATERIALS LICENSING BRANCH  
U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
2443 WARRENVILLE ROAD, SUITE 210  
LISLE, IL 60532-4352

NMSS 2

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:

IF YOU ARE LOCATED IN:

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, MISSISSIPPI, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM  
DIVISION OF NUCLEAR MATERIALS SAFETY  
U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PA 19406-1415

NUCLEAR MATERIALS LICENSING BRANCH  
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
611 RYAN PLAZA DRIVE, SUITE 400  
ARLINGTON, TX 76011-4005

03034516

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.

1. THIS IS AN APPLICATION FOR (Check appropriate item)

- A. NEW LICENSE
- B. AMENDMENT TO LICENSE NUMBER
- C. RENEWAL OF LICENSE NUMBER

45-25405-1 Middleburg, VA 20118

2. NAME AND MAILING ADDRESS OF APPLICANT (Include ZIP code)

Virginia Equine Imaging  
PO Box 835  
Middleburg, VA 20118

RECEIVED  
REGION I  
AUG 31 AM 10:36

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

2716 Landmark School Rd.  
The Plains, VA 20198

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

A. Kent. Allen, DVM

TELEPHONE NUMBER

540-687-4663

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL

a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY 3P AMOUNT ENCLOSED \$2,900.00

13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

CERTIFYING OFFICER -- TYPED/PRINTED NAME AND TITLE

A. Kent Allen, DVM

SIGNATURE

A. Kent Allen DVM

DATE

FOR NRC USE ONLY

TYPE OF FEE FEE LOG FEE CATEGORY AMOUNT RECEIVED CHECK NUMBER COMMENTS

5

APPROVED BY

DATE

141006

Virginia Equine Imaging  
Nuclear Licenses Continued  
License Number #45-25405-1

5) Radioactive Material

- a. Technetium 99m (Tc99m MDP)
- b. MDP
- c. 450 milliCuries (mCi) from a licensed nuclear pharmacy.

6) Purpose for which licensed material will be used:

Nuclear Scintigraphy, flow phase, pool phase and primarily static bone scans for diagnostic purposes in veterinary medicine.

7) Individual Responsible for Radiation Safety Program and their training experience:

A. Kent Allen, DVM-Radiation Safety Officer (RSO)-Has held two nuclear licenses for veterinary diagnostic imaging in the horse; one in Gilbert, AZ at Arizona Equine from 1990 to 1996, the second at Virginia Equine Imaging from 1997 to present. Dr. Allen has been the guest lecturer at the Veterinary Nuclear Medicine Symposium at the University Of Illinois Veterinary School from 1989 to 1997. He has lectured on diagnostic imaging in the horse nationally and internationally for many years. His practice in Arizona was the second veterinary private practice gamma camera installation in the world. He lectures and trains his staff at Virginia Equine Imaging on a yearly basis and once a year he does a mock spill test. He has a one or two year imaging internship that specifically trains graduate veterinarians on nuclear medicine, diagnostic imaging and radiation safety.

Dr. Allen has worked up over 3000 nuclear medicine cases and was one of the originators of nuclear medicine in the equine species.

8) Training for individuals working in or frequenting restricted areas:

A) All veterinarians and technician staff that handle the bone scan horses receive an initial period of training consisting of 2 hours lecture and demonstration by Dr. Allen. Their ongoing performance is reviewed on an ongoing daily basis by Drs Allen, Johns and Tyrrell. Once a year the staff receives a radiation safety and ALARA lecture consisting of four hours and a mock spill and clean up. All nuclear medicine staff is radiation badged and their levels are monitored by the RSO. Once a year their levels and ALARA are discussed with them.

B) Dr. Susan Johns as an authorized user (AU) has had radiation safety training at Virginia-Maryland VMTH during her four year DVM training. She graduated in 2002 and then completed a 2 year internship with Dr. Allen. Radiation safety was a daily subject during her internship, which included nuclear medicine, digital radiology and digital ultrasound. She has participated in over 1000 cases of nuclear scintigraphy with Dr. Allen and has been involved in well over 500 hours of all phases of nuclear medicine. She has been involved in case selection, calibration and operation of equipment, acquiring the scintigraphs and interpretation and case work up. She has also assisted Dr. Allen on teaching and educating the staff on continuing radiation safety.

C) Dr. Laurie Tyrrell as an authorized user (AU) has had radiation safety training at Michigan State University during her four year DVM training. She graduated in 2004 and then completed a 2 year internship with Dr. Allen. Radiation safety was a daily subject during her internship, which included nuclear medicine, digital radiology and digital ultrasound. She has participated in over 600 cases of nuclear scintigraphy with Dr. Allen and has been involved in well over 500 hours of all phases of nuclear medicine. She has been involved in case selection, calibration and operation of equipment, acquiring the scintigraphs and interpretation and case work up. She has also assisted Dr. Allen on teaching and educating the staff on continuing radiation safety.

#### 9) Facilities and Equipment:

A) Bone scans are performed with a Diagnostix Plus Gamma Camera. This is a Siemens camera that has been modified for static bone scans for veterinary medicine. It is attached to a custom built counter-balanced arm that has been used in equine veterinary medicine for over 10 years. We use an imaging computer with Mirage software. This camera has a quality control inspection at least once a year.

B) All surveys are conducted with Biodex 14C Geiger-Mueller counter. This instrument is sent in for quality control and calibration once a year to Ludlum Measurements in Sweetwater, TX.

C) We utilize IBA Molecular N.A. Radiopharmacy located at 100 Executive Drive, Suite 7, Sterling, Virginia 20166. The standard dose is 200 milliCuries delivered in to our radiation storage closet in a pre packaged syringe. The syringe is in a lead pig which is transported in an Ammo box carrier.

D) A syringe shield is used for injections.

E) Radiation badges and a ring for all NM personnel is provided by Global Dosimetry Solutions, 2652 McGaw Ave., Irvine, CA 92614.

#### 10) Radiation Safety Program

A) The radiation safety program consists of an annual lecture (4 hours) that reviews nuclear medicine procedures at VEI and ALARA. As well a mock spill is discussed and procedures to prevent and deal with are discussed.

B) Monthly email reminders are sent to all staff that is required to wear radiation safety badges about the importance of wearing the badges and their last monitoring period report. The radiation exposure report is reviewed monthly by the RSO. If anyone has reached notification levels the RSO will notify and discuss ALARA with them.

C) All staff handling either the dose or horses receiving doses wear latex gloves.

D) The ammo box containing the dose is scanned prior to opening and if levels are above 0.5 mR/hr (at 6 inches), the opening is stopped and the RSO consulted.

E) The veterinarian injecting the dose (the authorized user, AU) wears the ring and latex gloves and then opens the ammo box and retrieves the lead pig. The pig is unscrewed and the dose is extracted and the syringe shield is placed on the syringe. The dose is then injected into the jugular vein and pressure is applied to the injection site by an assistant. The syringe is then replaced in the lead pig and it is replaced in the ammo box. The banner is switched on the ammo box showing it is ready for transport.

F) The horse is returned to one of the two designated nuclear medicine stalls and the nuclear quarantine sheet is placed on the stall designating the horse, injection time and amount. This sheet also has the release and stall clean levels on it.

The stall reading chart has the stall used, the time and date injected and radiation level immediately outside the stall taken 24 hours later and the initials of who took it.

G) The release criteria for the nuclear medicine horses is 24 hours post-injection and less than 2.0 mR/hr measured 12 inches from the scapula.

H) People handling the nuclear medicine horses shall refrain from eating, drinking or applying cosmetics during that time and in the immediate area.

#### 11) Waste Management

A) Only two stalls are used in the Virginia Equine Imaging facility. They are the two south west stalls in the barn. They are now (8-30-07) designated Stall 1 (SW corner stall) and Stall 2 (immediately adjoining).

B) All nuclear medicine horses are kept in these two stalls. Bedding may be added to the stalls, but none can be removed until after 60 hours past the last horse in the stall has been injected with the dose. After that time the stall may be cleaned as normal waste. Any one handling these horses is to wear monitoring badges and latex gloves. The horses are to have their feet picked prior to being removed from their stall. The hoof pick used for this is to be hung beside the stall and not used for any other purpose. The stalls have warning signs and locks to keep unauthorized people out of the stalls.

C) Any needles used on the nuclear medicine horses are to be put in the sharps container in the radiation closet and allowed to decay to background prior to disposal.

D) Gloves used in dose injections or in handling the nuclear medicine horses should be deposited in the radioactive trash container in the radiation closet and allowed to decay to background prior to disposal.

#### 12) License Fees

Veterinary Medicine

Fee Category-3P

\$2,900.00

This is to acknowledge the receipt of your letter/application ~~dated~~ *undated*  
*RECEIVED 2/31/2007*, and to inform you that the initial processing which  
includes an administrative review has been performed.

*RENEWAL 45-25405-01*  
There were no administrative omissions. Your application was assigned to a  
technical reviewer. Please note that the technical review may identify additional  
omissions or require additional information.

Please provide to this office within 30 days of your receipt of this card

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A copy of your action has been forwarded to our License Fee & Accounts Receivable  
Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** *141006*.  
When calling to inquire about this action, please refer to this control number.  
You may call us on (610) 337-5398, or 337-5260.

BETWEEN: : (FOR LFMS USE)  
 : INFORMATION FROM LTS  
 : -----  
 :  
 License Fee Management Branch, ARM : Program Code: 02400  
 and : Status Code: 2  
 Regional Licensing Sections : Fee Category: 3P  
 : Exp. Date: 20070930  
 : Fee Comments: \_\_\_\_\_  
 : Decom Fin Assur Req'd: N  
 : ::

LICENSE FEE TRANSMITTAL

A. REGION **I**

1. APPLICATION ATTACHED  
 Applicant/Licensee: VIRGINIA EQUINE IMAGING  
 Received Date: 20070831  
 Docket No: 3034516  
 Control No.: 141006  
 License No.: 45-25405-01  
 Action Type: Renewal

2. FEE ATTACHED  
 Amount: \$2,900.00  
 Check No.: 2484

3. COMMENTS  
**No fee due for renewals.**  
 Signed M. A. Perkins  
 Date 8/31/2007

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered /\_\_/) )

- 1. Fee Category and Amount: \_\_\_\_\_
- 2. Correct Fee Paid. Application may be processed for
  - Amendment \_\_\_\_\_
  - Renewal \_\_\_\_\_
  - License \_\_\_\_\_
- 3. OTHER \_\_\_\_\_

Signed \_\_\_\_\_  
 Date \_\_\_\_\_