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Application for Materials License  
Veterinary Oncology and Hematology Center

5. Radioactive Material

Strontium-90 in equilibrium with Yttrium-90 in a sealed source ophthalmic applicator. Manufacturer: Amersham International; Model number: SIA.20; Serial Number: 0775ML

The stated activity as of January 13, 1989 was 55mCi. Using a decay constant of 27.78 years (based on NNDC, Brookhaven) this would result in a decayed activity of 30.4mCi on November 15, 2012. This activity will continue to decay naturally and will not be added to.

This device is an approved sealed source for the treatment of eye conditions in people in the Sealed Source and Device Registry.

The activity of the source will not exceed the maximum activity listed on the approved certificate of registration issued by NRC.

Emergency Plan (see Appendix 1 Below) will be posted conspicuously and reviewed annually for accuracy of information. This emergency plan will be reviewed with all employees in the annual radiation safety training.

6. Purposes for which licensed material will be used

Strontium-90/Yttrium-90 Ophthalmic applicator - Licensed material will be used for superficial application, plesiotherapy, for tumors or benign conditions in animal species. This material will be used only for non-human use.

7. Individuals responsible for radiation safety program and their training experience

John Farrelly, DVM, MS, ACVIM (Oncology), ACVR (Radiation Oncology). Dr. Farrelly has been board certified in radiation oncology since 2004. During his residency he received extensive training in radiation physics, biology and radiation safety. Prior to that he successfully completed the Nuclear Medicine Physics and Radiopharmacy Course at Memorial Sloan-Kettering Cancer Center and Cornell University Medical College in 2000 - 2001. Since his residency he has served as a member of the radiation safety committee at the Animal Medical Center, New York, NY and acted as radiation safety officer at the Animal Medical Center and then the Veterinary Cancer Center, Norwalk, CT. He has worked with a strontium -90 ophthalmic applicator on a regular basis. A complete CV is attached for review.

Dr. Farrelly will act as the RSO

Dr. Farrelly will be the only AU

8. Training for individuals working in or frequenting restricted areas

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All staff: All hospital staff will receive training in general radiation safety principles including principles specific to Strontium-90 in a sealed source. This training will be performed prior to clinical use of the licensed material

Radiation staff: Staff working in radiation therapy will receive training in general radiation safety principles including those specific to Strontium-90 in a sealed source. This will include specific training in safety relative to storage and monitoring of the licensed material as well as safety when working around the material when it is in use.

See attached lecture slides and handout for details (Appendix 2 & 3)

#### 9. Facilities and equipment

The strontium-90 applicator will be stored in its original storage container, which is shielded for the low energy electrons. The container will be locked in an attic storage facility at the hospital where there is very limited traffic by hospital staff. The container as well as the attic will be labeled with appropriate labels to indicate that radioactive materials are stored within. The receipt of the material will be a one time event. This sealed source does not produce airborne radiation. The source will be retrieved from this storage location for clinical treatments. These are expected to occur on an infrequent basis (less than once a week) The source will only be retrieved from storage by the AU or by individuals who have been trained in handling of the storage container by the AU.

#### 10. Radiation safety program

Audit program – N/A for non-human use

Radiation monitoring instruments

We will use instruments that meet the radiation monitoring instrument specifications published in Appendix M to NUREG-1556, Vol 7, 'Program-Specific Guidance About Academic, Research and Development and other Licenses of Limited Scope,' dated December 1999. Additionally, we will implement the model survey meter calibration program published in Appendix M to NUREG-1566, Vol. 7, 'Program-Specific Guidance About Academic, Research and Development and other Licenses of Limited Scope,' dated December 1999. We reserve the right to upgrade our survey instruments as necessary.

Material Receipt and Accountability

Physical inventories will be conducted at intervals not to exceed 6 months, to account for the presence of the strontium -90 applicator. This may be performed at the time when the applicator is used for clinical use. This inventory will be documented by the RSO or AU, or as directed by the RSO.