



UNITED STATES  
**NUCLEAR REGULATORY COMMISSION**  
REGION I  
475 ALLENDALE ROAD  
KING OF PRUSSIA, PENNSYLVANIA 19406-1415

August 9, 2006

Docket No. 03003348  
Control No. 138965

License No. 45-11035-01

Robert W. Hoefer  
Vice President, Operations  
Sentara Virginia Beach General Hospital  
1060 First Colonial Road  
Virginia Beach, VA 23454

SUBJECT: SENTARA VIRGINIA BEACH GENERAL HOSPITAL, LICENSE AMENDMENT,  
CONTROL NO. 138965

Dear Mr. Hoefer:

This refers to your license amendment request dated May 24, 2006. Enclosed with this letter is the amended license.

Please note the following:

- a) Based on a discussion with Sandy Wolff, your Radiation Safety Officer, two devices containing strontium-90 sealed sources have been changed to storage-only status (the ARC Model B-1 ophthalmic applicator and the Nuclear Enterprises, Ltd. Model 2503 calibrator). All references to clinical and calibration use of these devices have been removed from your license. We understand that you are exploring options for disposal of these sources.
- b) This amendment releases you from all of the commitments in Item 10 of the application dated February 19, 2004, as the NRC no longer requires submission of the procedures included in Attachments 10.11 and 10.15.

Please review the enclosed document carefully and be sure that you understand and fully implement all the conditions incorporated into the amended license. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region I Office, Licensing Assistance Team, (610) 337-5239, so that we can provide appropriate corrections and answers.

An environmental assessment for this action is not required, since this action is categorically excluded under 10 CFR 51.22(c)(14).

Current NRC regulations and guidance are included on the NRC's website at [www.nrc.gov](http://www.nrc.gov); select **Nuclear Materials; Medical, Academic, and Industrial Uses of Nuclear Material**; then **Toolkit Index Page**. Or you may obtain these documents by contacting the Government Printing Office (GPO) toll-free at 1-888-293-6498. The GPO is open from 7:00 a.m. to 8:00 p.m. EST, Monday through Friday (except Federal holidays).

R. Hoefel  
Sentara Virginia Beach General Hospital

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Thank you for your cooperation.

Sincerely,

***Original signed by Sandra Gabriel***

Sandra Gabriel  
Senior Health Physicist  
Medical Branch  
Division of Nuclear Materials Safety

Enclosure:  
Amendment No. 41

cc:  
Sandy J. Wolff, CHP, DABR, Radiation Safety Officer

R. Hoefler  
Sentara Virginia Beach General Hospital

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**SUNSI Review Complete: SGabriel**

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NAME	SGabriel/SLG							
DATE	8/9/2006							

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**MATERIALS LICENSE**

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<p>Licensee</p> <p>1. Sentara Virginia Beach General Hospital</p> <p>2. 1060 First Colonial Road Virginia Beach, Virginia 23454</p>	<p>In accordance with the letter dated May 24, 2006,</p> <p>3. License number 45-11035-01 is amended in its entirety to read as follows:</p> <hr/> <p>4. Expiration date August 31, 2014</p> <hr/> <p>5. Docket No. 030-03348 Reference No.</p>	
<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Any byproduct material permitted by 10 CFR 35.100</p> <p>B. Any byproduct material permitted by 10 CFR 35.200</p> <p>C. Any byproduct material permitted by 10 CFR 35.300</p> <p>D. Any byproduct material permitted by 10 CFR 35.400</p> <p>E. Strontium 90/Yttrium 90</p> <p>F. Yttrium 90</p> <p>G. Strontium 90</p>	<p>7. Chemical and/or physical form</p> <p>A. Any</p> <p>B. Any</p> <p>C. Any</p> <p>D. Sealed source (Theragenics Model 200)</p> <p>E. Sealed Source (BEBIG Model Sr0.S03; AEAT Model SICW.2 Series)</p> <p>F. Any</p> <p>G. Sealed sources (ARC Model B-1 and Radiochemical Centre Model SIC.7)</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. As needed</p> <p>B. As needed</p> <p>C. 500 millicuries</p> <p>D. 1,000 millicuries</p> <p>E. 5 millicuries per source and 800 millicuries total</p> <p>F. 200 millicuries</p> <p>G. 60 millicuries</p>

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## 9. Authorized use:

- A. Any uptake, dilution and excretion study permitted by 10 CFR 35.100.
- B. Any imaging and localization study permitted by 10 CFR 35.200.
- C. Any diagnostic study or therapy procedure permitted by 10 CFR 35.300.
- D. Any manual brachytherapy procedure permitted by 10 CFR 35.400.
- E. For use in Best Vascular, Inc. A1000 series models for intravascular brachytherapy.
- F. Calibration of the licensee's instruments.
- G. For storage incident to disposal of an ARC Model B-1 ophthalmic applicator and a Nuclear Enterprises, Ltd. Model 2503 Thimble Ionization Chamber Calibrator.

## CONDITIONS

- 10. A. Licensed material may be used or stored only at the licensee's facilities located at 1060 First Colonial Road, Virginia Beach, Virginia and at the Advanced Imaging Center, 1080 First Colonial Road, Virginia Beach, Virginia.
- B. Licensed material listed in 6.B., may be used or stored at the licensee's facilities located at Tidewater Cardiovascular Institute (TCI), 1708 Old Donation Parkway, Virginia Beach, Virginia.
- 11. The Radiation Safety Officer for this license is Sandy J. Wolff, CHP, DABR.
- 12. Licensed material is only authorized for use by, or under the supervision of:
  - A. Individuals permitted to work as an authorized user and/or authorized medical physicist in accordance with 10 CFR 35.13 and 35.14.
  - B. The following individuals are authorized users for medical use as indicated:

Authorized UsersMaterial and Use

Harry Alexander Allan, M.D.

35.100; 35.200

Ricardo De la Torre, M.D.

35.100; 35.200; 35.300

Mark Cramer, M.D.

35.100; 35.200; 35.300 except Iodine 131 in quantities greater than 33 millicuries

John G. Kenerson, M.D.

35.200

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Authorized UsersMaterial and Use

Man Hyong Kim, M.D.

35.100; 35.200

John D. O'Neil, M.D.

35.100; 35.200

Jeffrey A. Klein, M.D.

35.100; 35.200; 35.300 except Iodine 131 in quantities greater than 33 millicuries

Douglas Charles Brown, M.D.

35.100; 35.200

Alan Zabell, M.D.

35.300; 35.400; Strontium 90 for intravascular brachytherapy procedures; Yttrium 90 for instrument calibration

Mark E. Shaves, M.D.

35.300; 35.400; Strontium 90 for intravascular brachytherapy procedures

Granville Batte, M.D.

35.100; 35.200; 35.300

Robert Mariano, M.D.

35.100; 35.200

Demetrios James Kazakis, M.D.

35.100; 35.200

C. The following individuals are authorized medical physicists as indicated:

Authorized Medical PhysicistsMaterial and Use

Holly S. Dalton, M.S.

Strontium 90 in an Intravascular Brachytherapy Afterloader Device for calibrations, spot-checks, and training

Timothy E. Kennelly, M.S.

Strontium 90 in an Intravascular Brachytherapy Afterloader Device for calibrations, spot-checks, and training

Alexander Gray, M.S.

Strontium 90 in an Intravascular Brachytherapy Afterloader Device for calibrations, spot-checks, and training

Wen-Jong Wang, M.S.

Strontium 90 in an Intravascular Brachytherapy Afterloader Device for calibrations, spot-checks, and training

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D. The following individuals are authorized users for non-medical uses as indicated:

UsersMaterial and Use

Sandy J. Wolff, CHP, DABR

Strontium 90 (supervision of storage)

E. Intravascular brachytherapy procedures shall be conducted under the supervision of the authorized user, who will consult with the interventional cardiologist/physician and authorized medical physicist prior to initiating treatment. The procedures shall be conducted in the physical presence of the authorized user or the authorized medical physicist.

13. The intravascular brachytherapy afterloader device shall be inspected and serviced at intervals recommended by the manufacturer, and maintenance and repair shall be performed by the manufacturer or persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
14. The authorized medical physicist shall perform independent measurement of intravascular brachytherapy source output, before the first patient treatment, using a dosimetry system that meets the requirements of 10 CFR 35.630(a).
15. The licensee shall survey the patient and intravascular brachytherapy catheter immediately following source retraction or removal to confirm complete retraction of the source(s) as specified in 10 CFR 35.404.
16. For sealed sources not associated with 10 CFR Part 35 use, the following conditions apply:
- A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed six months or at the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State.
- B. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or under equivalent regulations of an Agreement State, prior to the transfer, a sealed source received from another person shall not be put into use until tested and the test results received.
- C. Sealed sources need not be tested if they contain only hydrogen-3; or they contain only a radioactive gas; or the half-life of the isotope is 30 days or less; or they contain not more than 100 microcuries of beta- and/or gamma-emitting material or not more than 10 microcuries of alpha-emitting material.

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- D. Sealed sources need not be tested if they are in storage and are not being used; however, when they are removed from storage for use or transferred to another person and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- E. The leak test shall be capable of detecting the presence of 0.005 microcurie (185 becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie (185 becquerels) or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations.
- F. Tests for leakage and/or contamination, including leak test sample collection and analysis, shall be performed by the licensee or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
- G. Records of leak test results shall be kept in units of microcuries and shall be maintained for 5 years.
17. The licensee shall conduct a physical inventory every six months, or at other intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 5 years from the date of each inventory and shall include the radionuclides, quantities, manufacturer's name and model numbers, and the date of the inventory.
18. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
19. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
20. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material to quantities below the minimum limit specified in 10 CFR 30.35(d), 40.36(b), and 70.25(d) for establishing decommissioning financial assurance.

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21. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. This license condition applies only to those procedures that are required to be submitted in accordance with the regulations. Additionally, this license condition does not limit the licensee's ability to make changes to the radiation protection program as provided for in 10 CFR 35.26. The U.S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.

- A. Application dated February 19, 2004, excluding attachments 9.2-9.4 and Item 10 (ML040620116)
- B. Letter dated May 12, 2004 (ML041390243)
- C. Letter dated June 25, 2004 (ML041950373)
- D. Letter dated January 4, 2006 (ML060230101)
- E. Letter dated May 24, 2006 (ML061660533)



For the U.S. Nuclear Regulatory Commission

Date August 9, 2006

By

***Original signed by Sandra Gabriel***

Sandra Gabriel  
Medical Branch  
Division of Nuclear Materials Safety  
Region I  
King of Prussia, Pennsylvania 19406